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A
NATURAL HISTORY
OF
The Globe, and of Man;
BEASTS, BIRDS, FISHES, REPTILES, AND INSECTS.

FROM THE
WRITINGS OF BUFFON, CUVIER, LACEPEDE,
AND OTHER EMINENT NATURALISTS.

TO WHICH ARE ADDED,
ELEMENTS OF BOTANY.

WITH UPWARDS OF
FOUR HUNDRED ENGRAVINGS ON WOOD.

IN FOUR VOLUMES.
VOL. III.

BUFFON'S
NATURAL HISTORY

OF

The Globe, and of Man;

BEASTS, BIRDS, FISHES, REPTILES, AND INSECTS.

CORRECTED AND ENLARGED

By JOHN WRIGHT, M.Z.S.



W. Harvey, del.

J. Thompson, sc.

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BUFFON'S NATURAL HISTORY.

PART II.

CHAPTER I.¹

Of Birds in General...Of the Struthious, or Ostrich Order...The OSTRICH...The Touyou...The CASSOWARY...The New Holland Emu...The DODO...The Solitary and the Nazarene...Of Rapacious Birds...The Golden EAGLE...Different Species of Eagles...The Osprey, &c....The Condor...The VULTURE...The different Species of Vultures...The King Vulture, the Secretary, &c....The FALCON...Description of the Art of Falconry...Species of Falcons and other Hawks...The Kite...The Buzzard...The SHRIKE, or Butcher Bird...The OWL...Species of the Owl.

QUADRUPEDS in their general structure have much relation with that of man ; but the structure of birds is in most respects entirely dissimilar from both. One obvious mark of distinction between this class of animals and the quadruped part of the creation is, that instead of hair, birds are covered with feathers, and these appear to be nourished and kept in order in a different manner from the hair of animals. Lest

¹ In the following account of birds, they are classed agreeably to the scientific arrangement of *orders, genera, and species*. In the contents of the chapters, therefore, the genus is distinguished by capitals, and the different species which are described are printed in Italics.

the feathers should spoil by exposure to the air, the bird is furnished with a gland situated on the rump of the animal, containing a proper quantity of oil, which it presses out with its beak, and occasionally anoints its feathers. In water-fowl this oil is so plentiful that it even imparts a degree of rancidity to the flesh, and we see that their coat of feathers is rendered by it completely waterproof².

The wings of birds are remarkably strong. The flap of a swan's wing would break a man's leg, and a similar blow from an eagle has been known to lay a man dead in an instant.

The sense of seeing in birds is remarkably acute, and though they have no external ear, but only two small orifices or ear-holes, yet they do not appear to be deficient in hearing. The scent of some species is exquisitely delicate. In decoys where ducks are caught; the men who attend them generally keep a piece of turf lighted, on which they breathe, lest the fowl should smell them and fly away. The voice of birds is much louder in proportion to their size than that of other animals, for, in fact, the bellowing of an ox is not louder than the scream of a peacock.

The legs, the wings, the bones, and every part of the body, are much lighter, firmer, and more com-

² It may not be unnecessary to explain some terms which are used in speaking of the plumage of birds. The *coverts* are the shorter feathers, which hide the base of the quill feathers. On the wings there are the lesser, the greater, and the under-wing coverts. The *lesser coverts* are small feathers which lie in several rows on the bones of the wings; the *greater coverts* are those which lie immediately over the quills, as well as over the *secondaries*, or quills of the second joint; the *under coverts* line the inside of the wings. One term more it may be proper to explain, that is, the *scapulars*, which are the feathers that rise from the shoulders and cover the back. ERROR.

pact in birds than in other creatures. Their lungs are extended all over the cavity of their body.

Carnivorous birds, like carnivorous quadrupeds, have but one stomach, and that well calculated for digestion. Those that feed on grain have in addition to the crop or stomach, where their food is moistened or swelled, a gizzard, which is a very hard muscle, almost cartilaginous or gristly, and which they commonly fill with small stones, where the food is afterwards ground, in order to its complete digestion. Birds are subject to few diseases.

Birds of the same species do not always make their nests of the same materials, though in general there is a uniformity; the redbreast in some parts of England makes its nest with oak leaves where those leaves are plenty, in other parts it makes it with moss and hair. Where the eggs are numerous, it is necessary to make the nest warm; thus the wren, which is a small animal, and able to cover but a small compass, and yet lays many eggs, makes her nest remarkably warm; on the contrary, the plover, the eagle, the crow, &c. which lay but two or three, are not equally solicitous in this respect.

There are some birds which are called birds of passage, and which by migrating make an habitation in all parts of the earth; but in general every climate has birds peculiar to itself. In all countries birds are much longer lived than quadrupeds. The swan is said to live near three hundred years. They are, however, greatly inferior to quadrupeds in sense and docility.

The study of the manners and habits of birds is highly amusing. On the subject of those habits and manners we shall therefore present the reader with a few remarks from various sources of good authority.

“ A good ornithologist (says Mr. White) should be able to distinguish birds by their air, as well as by their colours and shape, on the ground as well as on the wing, and in the bush as well as in the hand. For, though it must not be said that every species of birds has a manner peculiar to itself, yet there is somewhat in most genera, at least, that at first sight discriminates them, and enables a judicious observer to pronounce upon them with some certainty. Put a bird in motion,

Et vera incessu patuit.

“ Thus kites and buzzards sail round in circles with wings expanded and motionless; and it is from their gliding manner that the former are still called in the north of England gleads, from the Saxon word glidan, to glide. The kestrel, or wind-hover, has a peculiar mode of hanging in the air in one place, his wings all the while being briskly agitated. Hen harriers fly low over heaths or fields of corn, and beat the ground regularly like a pointer or setting dog. Owls move in a buoyant manner, as if lighter than the air; they seem to want ballast. There is a peculiarity belonging to ravens that must draw the attention even of the most incurious—they spend all their leisure time in striking and cuffing each other on the wing, in a kind of playful skirmish; and when they move from one place to another, frequently turn on their backs with a loud croak, and seem to be falling to the ground. When this odd gesture betides them, they are scratching themselves with one foot, and thus lose the centre of gravity. Rooks sometimes dive and tumble in a frolicsome manner; crows and daws swagger in their walk; woodpeckers fly *volatu undoso*, opening

and closing their wings at every stroke, and so are always rising or falling in curves. All of this genus use their tails, which incline downwards, as a support while they run up trees. Parrots, like all other hooked-clawed birds, walk awkwardly, and make use of their bills as a third foot, climbing and descending with ridiculous caution. All the *gallinæ* parade and walk gracefully, and run nimbly; but fly with difficulty, with an impetuous whirring, and in a straight line. Magpies and jays flutter with powerless wings, and make no dispatch; herons seem encumbered with too much sail for their light bodies; but these vast hollow wings are necessary in carrying burdens, such as large fishes, and the like. Pigeons, and particularly the sort called smiters, have a way of clashing their wings the one against the other over their backs with a loud snap; another variety, called tumblers, turn themselves over in the air. Some birds have movements peculiar to the season of love; thus ringdoves, though strong and rapid at other times, yet in spring hang about on the wing, in a toying and playful manner; thus the cock snipe, while breeding, forgetting his former flight, fans the air like the wind-hover, and the greenfinch, in particular, exhibits such languishing and faltering gestures as to appear like a wounded and dying bird; the kingfisher darts along like an arrow; fern owls, or goatsuckers, glance in the dusk over the tops of trees like a meteor; starlings, as it were, swim along; while missel thrushes use a wild and desultory flight; swallows sweep over the surface of the ground and water, and distinguish themselves by rapid turns and quick evolutions; swifts dash round in circles; and the bank-martin moves with frequent vacillations, like a butterfly. Most of

the small birds fly by jerks, rising and falling as they advance. Most small birds hop; but wagtails and larks walk, moving their legs alternately. Sky-larks rise and fall perpendicularly as they sing; woodlarks hang poised in the air; and titlarks rise and fall in large curves, singing in their descent. The white-throat uses odd jerks and gesticulations over the tops of hedges and bushes. All the duck kind waddle; divers and auks walk as if fettered, and stand erect on their tails; these are the *compedos* of Linnæus. Geese and cranes, and most wild fowls, move in figured flights, often changing their position. The secondary remiges of *Tringæ*, wild ducks, and some others, are very long, and give their wings, when in motion, a hooked appearance. Dabchicks, moorhens, and coots, fly erect, with their legs hanging down, and hardly make any dispatch; the reason is plain, their wings are placed too forward, out of the true centre of gravity; as the legs of auks and divers are situated too backward.

“ From the motion of birds, the transition is natural enough to their notes and language, of which I shall say something. Not that I would pretend to understand their language, like the vizier, who by the recital of a conversation which passed between two owls, reclaimed a sultan³, before delighting in conquest and devastation; but I would be thought only to mean that many of the winged tribes have various sounds and voices adapted to express their various passions, wants, and feelings, such as anger, fear, love, hatred, hunger, and the like. All species are not equally eloquent; some are copious and fluent, as it were, in their utterance,

³ See Spectator, vol. vii. No. 512.

while others are confined to a few important sounds ; no bird, like the fish kind, is quite mute, though some are rather silent. The language of birds is very ancient, and, like other ancient modes of speech, very elliptical ; little is said, but much is meant and understood.

“ The notes of the eagle kind are shrill and piercing ; and about the season of nidification much diversified, as I have been often assured by a curious observer of nature, who long resided at Gibraltar, where eagles abound. The notes of our hawks much resemble those of the king of birds. Owls have very expressive notes, they hoot in a fine vocal sound, much resembling the *vox humana*, and reducible by a pitch-pipe to a musical key. This note seems to express complacency and rivalry among the males : they use also a quick call and a horrible scream ; and can snore and hiss when they mean to menace. Ravens, besides their loud croak, can exert a deep and solemn note that makes the woods to echo ; the amorous sound of a crow is strange and ridiculous ; rooks, in the breeding season, attempt sometimes, in the gaiety of their hearts, to sing, but with no great success ; the parrot kind have many modulations of voice, as appears by their aptitude to learn human sounds ; doves coo in an amorous and mournful manner, and are emblems of despairing lovers ; the woodpecker sets up a sort of loud and hearty laugh ; the fern owl, or goat sucker, from the dusk till daybreak, serenades his mate with the clattering of castanets. All the tuneful *passeres* express their complacency by sweet modulations, and a variety of melody. The swallow, by a shrill alarm, bespeaks the attention of the other *hirundines*, and bids them beware that the hawk is at hand.

Aquatic and gregarious birds, especially the nocturnal, that shift their quarters in the dark, are very noisy and loquacious; as cranes, wild geese, wild ducks, and the like; their perpetual clamour prevents them from dispersing and losing their companions.

“ In so extensive a subject, sketches and outlines are as much as can be expected; for it would be endless to instance in all the infinite variety of the feathered nation. We shall therefore confine the remainder of this letter to the few domestic fowls of our yards, which are most known, and therefore best understood. And first, the peacock, with his gorgeous train, demands our attention; but, like most of the gaudy birds, his notes are grating and shocking to the ear: the yelling of cats, and the braying of an ass, are not more disgusting. The voice of the goose is trumpet like, and clanking; and once saved the Capitol at Rome, as grave historians assert: the hiss also of the gander is formidable and full of menace, and ‘protective of his young.’ Among ducks the sexual distinction of voice is remarkable; for while the quack of the female is loud and sonorous, the voice of the drake is inward, and harsh and feeble, and scarce discernible. The cock turkey struts and gobbles to his mistress in a most uncouth manner; he hath also a pert and petulant note when he attacks his adversary. When a hen turkey leads forth her young brood, she keeps a watchful eye: and if a bird of prey appear, though ever so high in the air, the careful mother announces the enemy with a little inward moan, and watches him with a steady and attentive look; but, if he approach, her note becomes earnest and alarming, and her outcries are redoubled.

“ No inhabitants of a yard seem possessed of such a variety of expression, and so copious a language, as common poultry. Take a chicken of four or five days old, and hold it up to a window where there are flies, and it will immediately seize its prey with little twitterings of complacency ; but if you tender it a wasp or a bee, at once its note becomes harsh and expressive of disapprobation and a sense of danger. When a pullet is ready to lay, she intimates the event by a joyous and easy soft note. Of all the occurrences of their life, that of laying seems to be the most important ; for no sooner has a hen disburdened herself than she rushes forth with a clamorous kind of joy, which the cock and the rest of his mistresses immediately adopt. The tumult is not confined to the family concerned, but catches from yard to yard, and spreads to every homestead within hearing, till at last the whole village is in an uproar. As soon as a hen becomes a mother, her new relation demands a new language ; she then runs clucking and screaming about, and seems agitated as if possessed. The father of the flock has also a considerable vocabulary ; if he finds food, he calls a favourite concubine to partake ; and if a bird of prey passes over, with a warning voice he bids his family beware. The gallant chanticleer has, at command, his amorous phrases and his terms of defiance. But the sound by which he is best known is his crowing, by this he has been distinguished in all ages as the countryman’s clock or larum, as the watchman that proclaims the divisions of the night. Thus the poet elegantly styles him

The crested cock, whose clarion sounds
The silent hours.

"A neighbouring gentleman one summer had lost most of his chickens by a sparrowhawk, that came gliding down between a faggot pile and the end of his house to the place where the coops stood. The owner, inwardly vexed to see his flocks thus diminishing, hung a setting net adroitly between the pile and the house, into which the caitiff dashed, and was entangled. Resentment suggested the law of retaliation, he therefore clipped the hawk's wings, cut off his talons, and fixing a cork on his bill, threw him down among the brood hens. Imagination cannot paint the scene that ensued; the expressions that fear, rage, and revenge inspired were new, or at least such as had been unnoticed before. The exasperated matrons upbraided, they execrated, they insulted, they triumphed. In a word, they never desisted from buffeting their adversary till they had torn him in a hundred pieces.

"The more I reflect on the *στοργή* of animals, the more I am astonished at its effects. Nor is the violence of this affection more wonderful than the shortness of its duration. Thus every hen is in her turn the virago of the yard, in proportion to the helplessness of her brood; and will fly in the face of a dog or a sow in defence of those chickens, which in a few weeks she will drive before her with relentless cruelty.

"This affection sublimates the passions, quickens the invention, and sharpens the sagacity of the brute creation. Thus a hen, just become a mother, is no longer the placid bird she used to be, but with feathers standing on end, wings hovering, and clucking note, she runs about like one possessed. Dames will throw themselves in the way of the greatest danger in order to avert it from their progeny.

Thus a partridge will tumble along before the sportsman in order to draw away the dogs from her helpless covey. In the time of nidification the most feeble birds will assault the most rapacious. All the hirundines of a village are up in arms at the sight of a hawk, whom they will persecute till he leaves the district. A very exact observer has often remarked that a pair of ravens, nesting in the rock of Gibraltar, would suffer no vulture or eagle to rest near their station, but would drive them from the hill with an amazing fury: even the blue thrush, at the season of breeding, would dart out from the clefts of the rock to chase away the kestrel or the sparrowhawk. If you stand near the nest of a bird that has young, she will not be induced to betray them by an inadvertent fondness, but will wait about at a distance with meat in her mouth for an hour together.

“The flycatcher of the zoology (the *stoparola* of Ray) builds every year in the vines that grow on the walls of my house. A pair of these little birds had one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed. But a hot sunny season coming on before the brood was half fledged, the reflection of the wall became insupportable, and must inevitably have destroyed the tender young, had not affection suggested an expedient, and prompted the parent birds to hover over the nest all the hotter hours, while, with wings expanded, and mouths gaping for breath, they screened off the heat from their suffering offspring.

“A farther instance I once saw of notable sagacity in a willow wren, which had built in a bank in my fields. This bird a friend and myself had observed

as she sat in her nest, but were particularly careful not to disturb her, though we saw she eyed us with some degree of jealousy. Some days after, as we passed that way, we were desirous of remarking how this brood went on; but no nest could be found, till I happened to take up a bundle of long green moss, as it were carelessly thrown over the nest, to dodge the eye of any impertinent intruder."

The rapidity with which birds move from place to place is one remarkable circumstance attending them. The hawk, and many other birds, occasionally fly at the rate, perhaps, of not less than a hundred and fifty miles in an hour. Major Cartwright ascertained, from repeated observation, on the coast of Labrador, that the velocity of an eider duck's flight is ninety miles an hour. Even the common crow moves twenty-five miles within that space of time; the swallow ninety-two miles; and the rapidity of the swift is supposed to be three times greater than even that of the swallow. A falcon belonging to Henry IV. of France made its escape, and in twenty-four hours afterwards was found at Malta, one thousand three hundred and fifty miles distance; so that, as hawks do not fly by night, he must have hourly flown seventy-five miles, even supposing him to have been immediately discovered at Malta, and the days to have been at the longest.

This being the case, and it being known also that many birds can subsist for a considerable time without food, there can be no reason to wonder at birds being able to accomplish their periodical migrations to and from distant climes. On the subject of migration, the author of the *British Naturalist* has some admirable remarks,—admirable no less for their spirit of piety than for their scientific knowledge,

and the simple elegance of the language in which they are expressed. It would be an injustice to give them in any other words than his own.

After having noticed generally the seasonal change of place in animals, he thus proceeds: "The migrations of birds are more remarkable, and have been more early and more carefully observed; and that birds should have a greater range, is in perfect accordance with the general law of nature. The apparatus with which the majority of birds are furnished for preparing their food for digestion in the stomach, confines that food within a smaller compass than the food of the quadrupeds. With the exception of the birds of prey, which can rend other animals for their subsistence, and are thus capable of living at all seasons of the year, the birds must subsist upon soft substances, as insects and their larvæ, or the seeds and green and succulent leaves of plants; while quadrupeds, being furnished with organs of mastication, which, along with the saliva, reduce their food to a sort of pulp before it be swallowed, can subsist upon dry leaves and bark, and even upon twigs. Thus, in even the coldest climates, there is still some food for a portion of those quadrupeds that live upon vegetables; and these again afford subsistence for the carnivorous ones, as well as for the more powerful birds of prey. In very cold places too, the smaller quadrupeds, and even some of the larger ones, *hibernate*, or pass the winter in a state of torpidity, in which they have no necessity for food, and consequently none for change of place.

"But in the severity of the northern winter, the food of the feathered tribes fails. The earth, and the water are bound up in ice, so that the worms

and larvæ are beyond their reach; the air, which in summer is so peopled with insects, is left without a living thing; the buds of the lowly evergreen shrubs, and those seeds which have fallen to the ground, are hid under that cold but fertilizing mantle of snow, which, cold as it seems, secures the vegetation of the coming summer; the berries and capsules that rise above the snow are soon exhausted; and the buds of the alpine trees are so generally enveloped in resin and other indigestible matters, that they cannot be eaten. Thus the birds must roam in quest of food: nor is it a hardship—it is a wise provision. Were they to remain, and had they access to the embryos of life in their then state, one season would go far to make the country a desert, and even the birds would be deprived of their summer's subsistence for themselves and their young. They are also provided with means by which they can transport themselves, in average states of the weather, without much inconvenience; and thus, while in migration they seek their own immediate comfort, they preserve other races of beings. In some of the species, too, they preserve a portion of their own race. It has been mentioned that the young of the swan are unable to migrate the first year; and of most migratory birds there are always a few that are unable for the fatigue of migration. If the strong did not go away, the whole of the weak, and in cases like that of the swan, the whole of the young, would perish. After the moulting takes place, in most birds, perhaps in all of them in a state of nature, the paternal instinct ceases to operate; they feel no more for the brood of that year. It is each for itself individually during the necessity of the winter; and when the genial warmth

of the spring again awakens the more kindly feelings, the objects of those feelings are a new brood. In her march, nature never looks back ; her instinct is fixed on the present, and thus leads to the future, without any reference to that experience which the progress of reason and thought requires. In consequence of this, the strong would take the food from the weak, the active from the feeble, and the full-grown from their offspring, if nature were not true to her purpose, and prompted the powerful to wing their way to regions in which food is more easily to be found, and leave the young and the feeble to pick up the fragments that are left, in those places which they are unable to quit.

“ It has been said, that the *teachableness* which is the characteristic of man has nothing to do with the instincts of the animals ; but it does not follow that he should not take a lesson from those instincts ; because the instincts of animals and the reason of man are all intended to forward the very same objects—the good of the individual and of the race. Now, in this very fact of the migration of birds, simple and natural as it may seem, and unheeded as it is by careless observers, we have an example worth copying, even in the most refined and best governed society. The strong and the active go upon far journeys, and subsist in distant lands, and leave what food there is for their more helpless brethren. Would men do the same—would they temper the work to the capacity of the worker, in the way that it is done by the instincts of these migratory birds, the world would be spared a deal of misery. It is thus that, in the careful study of nature, man stands reprov'd at the example of the lower creatures, and learns, by doing by reason as

they do by instinct, to be grateful to that Power, 'who teacheth us more than the beasts of the field, and maketh us wiser than the fowls of heaven.'

"The migrating birds that spend part of the year in the British islands, may be divided into two classes,—*summer birds* and *winter birds*; but of both classes some are only *occasional visitants*, others are mere birds of passage, tarrying only for a short time as they are on their route to other countries.

"The two general classes observe the same law in both of their migratory instincts—the finding of food and of fit places for the rearing of their young. The general motion for these two purposes is in opposite directions—they move towards warmer regions in search of food, and towards colder ones in order to build their nests. The winter birds come to us for food, and the summer ones for nidification. The winter ones never are those that feed upon land insects, and but seldom those that feed upon seeds; because when they come, there are few of these. They are chiefly water birds, in some sense or other. They frequent the shores of the seas, the inland lakes, or the margins of springs, rivulets, and rivers; and they swim or wade, or merely run along the bank, according to their nature; and resort to those haunts where their food is to be found with the most unerring certainty. They are all common inhabitants of regions farther to the north, have reared their broods there, and remained till the supply of food began to fail. The extent of their flight southward depends upon the severity of the winter; they come earlier, and extend farther, when that is severe; and their departure is accelerated by a warm spring, and retarded by a cold one. Though the diffusion of the same species of birds be much more extended

than that of the same species of quadrupeds, there is still a variation according to the longitude. The birds of passage which appear in Britain are not exactly the same as those either of continental Europe or of America; and that accounts for the appearance of the occasional visitors. A strong wind from the east, during the time of their flight, often wafts a continental bird to our shores; and a strong wind from the west occasionally brings us an American visiter. The flight of birds is therefore a sort of augury, though a very different sort from that believed in by the superstitious of antiquity. It has no connexion with the offices or fortunes of men, but it tells what kind of season prevails in those climes whence the visitors come. The early appearance of the winter birds is a sure sign of an early winter in the northern countries; and the early appearance of the summer ones is just as sure a sign of an early and genial spring in the south.

“The migration of our winter visitants is a very simple matter; we can easily understand why birds, when their supply of food begins to fail, should fly off in a warm direction; but the return—the general migration northward for the purpose of rearing their young—is, at first consideration, a more difficult matter. Yet, when we think a little, the difficulty ceases, and the one movement becomes no more a miracle or a marvel than the other. Very many of the summer birds feed upon insects; and summer insects are more abundant in the northern regions than in the south. This happens particularly with the water-flies, of which there are supposed to be several generations in the course of a long summer's day; and the short night at that season occasions little interruption to their production. The same

causes which produce the greater supply of insect food, increase the daily period during which the bird can hunt; and this gives it a farther facility of finding food, over what it would have in the comparatively short days farther to the south. But the breeding time is that at which the birds are called upon for extraordinary labour. During the period that the nest is building, there is a new occupation altogether; and the nests even of very small birds are constructed with so much care, that that, and the finding of subsistence, demand more than the average power of industry. When the female begins to sit on the eggs, the feeding of her partially depends upon the male; and when the young are hatched, their support, till they are in a condition for supporting themselves, requires a considerable portion of the time and industry of both parents. When the young are fledged, the parent birds still require long days: the operation of moulting, by which their tattered plumage is replaced by a new supply, exhausts them: thus they have long days, and also food in abundance, when they are least able to make exertions in search of it; and by the time that the decreasing supply warns them that it is time to seek more southern climes, they are in prime feather and vigorous health, and able to sustain the fatigues of the voyage. The return, too, is, generally speaking, after the autumnal equinox; so that, in their migration southward, they have the same advantage of a longer day than in places northward. Thus, even in this common-place matter,—a matter which is so common-place that few take the trouble of heeding it, and almost none inquire farther than saying that it is the instinct of the birds,—we may trace as perfect a succession of antecedent and consequent,

or, as we say, of cause and effect, as in any other part of the works or economy of creation. We ought, indeed, to guard very carefully against stopping at the word *instinct*, or indeed at any other word which is so very general that we cannot attach a clear and definite meaning to it. Those general words are the stumbling blocks and barriers in the way to knowledge; and when we turn to them who take upon themselves the important business of instruction, and ask them for an *explanation*, they but too frequently give us a *word*; and when we get one, in our own language or in any other, to which we can attach no meaning, the path to knowledge is closed. Perhaps there are few words by which it is more frequently closed than this same word '*instinct*;' because we are apt to rest satisfied with it as an ultimate or insulated fact, and never inquire into that chain of phenomena of which it forms a part. Now nothing in nature stands alone. Creation needs no new fiat; but the succession of events throughout all her works depends on laws which are unerring, because they are not imposed by any thing from without, but are the very nature and constitution of the beings that appear to obey them. It is this which makes nature so wonderful, which so stamps upon it the impress of an almighty Creator:—its parts and phenomena are millions; the primary Power, that puts all in motion, is but One."

As the number of species in this order of animals is very numerous, amounting to above eight hundred, some degree of classification appears to be absolutely necessary. We shall therefore arrange them in eight orders. The first will include the few birds which there are of the struthious, or ostrich order, or those

which never rise from the earth. The second consists of the rapacious birds; the third is the gallinaeous, or poultry order, at the conclusion of which that which some authors have termed the columbine order, or the pigeon, and its varieties, is introduced; the fifth includes the pies; the sixth the passerine, or sparrow kind; the seventh the cloven-footed waterfowl, including those with pinnated feet; and the eighth the web-footed waterfowl⁴.

Of Birds of the Struthious Order.

THE OSTRICH

Is a bird very anciently known, since it is mentioned in the oldest of books. It has furnished the sacred writers with some of their most beautiful imagery; and its flesh was, even previous to the days of Moses, apparently a common species of food, since we find it interdicted, among other unclean animals, by the Jewish legislator.

The Ostrich is generally considered as the largest of birds, but its size serves to deprive it of the principal excellence of this class of animals, the power of flying. The medium weight of this bird may be estimated at seventy-five or eighty pounds, a weight which would require an immense power of wing to elevate into the atmosphere; and hence all those of the feathered kind which approach to the size of the Ostrich, such as the touyou, the cassowary, the dodo,

⁴ This arrangement is perfectly agreeable to that of our author, M. de Buffon, except that we have placed the struthious order first, as being most considerable in magnitude and importance.—EDITOR.

neither possess, nor can possess, the faculty of flight. The head and bill of the Ostrich somewhat resemble those of a duck ; and the neck may be compared to that of a swan, but that it is much longer ; the legs and thighs resemble those of a hen ; though the



whole appearance at a distance bears a strong resemblance to that of a camel : it is usually seven feet high from the top of the head to the ground ; but from the back it is only four ; so that the head and neck are above three feet long. Some reach the height of nine feet. From the top of the head to the rump, when the neck is stretched out in a right line, it is six feet long, and the tail is about a foot more. One of the wings, without the feathers, is a foot and a half ; and being stretched out, with the feathers, is three feet.

The plumage is much alike in all ; that is, generally black and white ; though some of them are

said to be gray. The greatest feathers are at the extremities of the wings and tail, and the largest are generally white. The next row is black and white; and of the small feathers on the back and belly, some are white and others black. There are no feathers on the sides, nor yet on the thighs, nor under the wings. The lower part of the neck, about half way, is covered with still smaller feathers than those on the belly and back; and those, like the former, also are of different colours. The head and upper part of the neck are covered with hair.

At the end of each wing there is a kind of spur, almost like the quill of a porcupine. It is an inch long, being hollow, and of a horny substance. There are two of these on each wing; the largest of which is at the extremity of the bone of the wing, and the other a foot lower. The neck seems to be more slender in proportion to that of other birds, from its not being furnished with feathers.

The thighs are very fleshy and large, being covered with a white skin, inclining to redness, and wrinkled in the manner of a net, whose meshes will admit the end of a finger. Some have very small feathers here and there on the thighs; and others again have neither feathers nor wrinkles. The legs are covered before with large scales. The end of the foot is cloven, and has two very large toes, which, like the leg, are covered with scales. These toes are of equal sizes. The largest, which is on the inside, is seven inches long, including the claw, which is near three-fourths of an inch in length, and almost as broad. The other toe is but four inches long, and is without a claw.

The Ostrich is a native only of the torrid regions of Africa, and has never bred out of that country

which first produced it. Though, however, the climate of France be much less warm than that of Barbary, yet some Ostriches have been known to lay in the royal menagerie at Versailles; but the gentlemen of the Academy have in vain attempted to make these eggs produce by an artificial process. This bird, so disqualified for society with man, inhabits, from preference, the most solitary and horrid deserts, where there are few vegetables to clothe the surface of the earth, and where the rain never comes to refresh it. The Arabians assert that the Ostrich never drinks; and the place of its habitation seems to confirm the assertion. In these formidable regions Ostriches are seen in large flocks, which to the distant spectator appear like a regiment of cavalry, and have often alarmed a whole caravan. There is no desert, how barren soever, but is capable of supplying these animals with provision; they eat almost every thing; and these barren tracts are thus doubly grateful as they afford both food and security. In Southern Africa they are exceedingly injurious to the farmers, as they will destroy a field of wheat so effectually as not to leave a single ear behind; and this operation they perform without danger to themselves, as they are so vigilant and so swift, that it is almost impossible to get a shot at them. The Ostrich is of all animals the most voracious. It will devour leather, grass, hair, iron, stones, or any thing that is given. Nor are its powers of digestion less in such things as are digestible. Those substances which the coats of the stomach cannot soften pass whole; so that glass, stones, or iron, are excluded in the form in which they are devoured. All metals, indeed, which are swallowed by any animal, lose a part of their weight, and often the extremities of their figure,

from the action of the juices of the stomach upon their surface. A quarter pistole, which was swallowed by a duck, lost seven grains of its weight in the gizzard before it was voided; and it is probable that a still greater diminution of weight would happen in the stomach of an Ostrich. Considered in this light, therefore, this animal may be said to digest iron; but such substances seldom remain long enough in the stomach of any animal to undergo so tedious a dissolution. The Ostrich lays very large eggs, some of them being above five inches in diameter, and weighing above fifteen pounds. These eggs have a very hard shell, somewhat resembling those of the crocodile, except that those of the latter are less and rounder. It is a curious fact, that these eggs often contain a number of small, exceedingly hard, oval-shaped pebbles, about the size of a marrow-fat pea, and of a yellow colour. They are sometimes set, and used as buttons.

The season for laying depends on the climate; in the northern parts of Africa it is about the beginning of July; in the south it is about the latter end of December. These birds are very prolific, and lay generally from thirty to forty eggs in a season, and about twelve at one clutch. It has been commonly reported that the female deposits them in the sand; and, covering them up, leaves them to be hatched by the heat of the climate, and then permits the young to shift for themselves. Very little of this, however, is true: no bird has a stronger affection for her young than the Ostrich, and none watches her eggs with greater assiduity. It happens, indeed, in those hot climates, that there is less necessity for the continual incubation of the female; and she more frequently leaves her eggs, which are in no fear of

being chilled by the weather: but though she sometimes forsakes them by day, she always carefully broods over them by night; nor is it more true that they forsake their young after they are excluded the shell. On the contrary, the young ones are not even able to walk for several days after they are hatched. During this time the old ones are very assiduous in supplying them with grass, and very careful to defend them from danger: nay, they encounter every danger in their defence.

The strength and size of the Ostrich has suggested to men the experiment of using them as animals of burthen. The tyrant Firmius, who reigned in Egypt about the end of the third century, was frequently carried by large Ostriches. Moore, an English traveller, relates, that he had seen at Joar, in Africa, a man travelling on an Ostrich. And Vallisnieri speaks of a young man, who exhibited himself upon one of these birds at Venice. In fine, M. Adanson saw, at the factory at Podor, two Ostriches, which were yet young, of which the stronger went at a pace which would have distanced the fleetest English racehorse, with two negroes on its back. Whether this bird could be broken and tamed so as to carry its rider with the same safety and docility as a horse is a different question; and let it be remembered that, though the Ostriches above-mentioned ran for a short time faster than a racehorse, there is no reason to believe they could hold out so long.

From ancient writers we learn, that whole nations have acquired the name of *Struthophagi* (Ostrich-eaters) from the preference which they had manifested for the flesh of this bird. Apicius has recommended a peculiar sauce for the Ostrich, which shows at least that it was eaten among the Romans, and at a single

feast the Emperor Heliogabalus was served with the brains of *six hundred* of these animals. Even at this period some of the savage nations of Africa hunt them not only for their plumage, but for their flesh also, which they consider as a dainty. They sometimes also breed these birds tame, to eat the young ones, of which the female is said to be the greatest delicacy; and a single egg is said to be a sufficient entertainment for eight men. The skin of the ostrich is so thick, that it is used for leather by the Arabians; and of the eggs drinking-cups are made. The value of the plumage is well known in most countries of Europe.

As the spoils of the ostrich are thus valuable, it is not to be wondered at that man has become their most assiduous pursuer. For this purpose, the Arabians train up their best and fleetest horses, and hunt the Ostrich still in view. Perhaps, of all varieties of the chase, this, though the most laborious, is yet the most entertaining. As soon as the hunter comes within sight of his prey, he puts on his horse with a gentle gallop, so as to keep the Ostrich still in sight; yet not so as to terrify him from the plain into the mountains. Upon observing himself, therefore, pursued at a distance, the bird begins to run at first, but gently; either insensible of his danger, or sure of escaping. In this situation he somewhat resembles a man at full speed; his wings, like two arms, keep working with a motion correspondent to that of his legs; and his speed would very soon snatch him from the view of his pursuers, but, unfortunately for the silly creature, instead of going off in a direct line, he takes his course in circles; while the hunters still make a small course within, relieve each other, meet him at unexpected turns, and keep

him thus still employed, still followed, for two or three days together. At last, spent with fatigue and famine, and finding all power of escape impossible, he endeavours to hide himself from those enemies he cannot avoid, and covers his head in the sand, or the first thicket he meets. Sometimes, however, he attempts to face his pursuers : and, though in general the most gentle animal in nature, when driven to desperation, he defends himself with his beak, his wings, and his feet. Such is the force of his motion, that a man would be utterly unable to withstand him in the shock.

The *Struthophagi* had another mode of capturing these animals. They disguised themselves in the skin of an Ostrich, and putting one of their arms through the neck, they imitated all its motions. By this means they are said to have enabled themselves to approach and take them at pleasure. In the same manner the savages of America disguise themselves as a roebuck, in order to surprise that animal.

Ostriches are sometimes bred in flocks, for they are easily tamed. In this domesticated state they play and frisk about with much vivacity, and are tractable and familiar towards those who are acquainted with them. To strangers, however, they are often fierce, and will attack them with fury, making an angry hissing noise, and having their throats inflated, and their mouths open. During the night they frequently utter a discordant cry, which bears a resemblance to the distant roaring of a lion, or the hoarse tone of a bear or an ox when in great agony.

THE TOUYOU, OR RHEA,

WHICH many call the American Ostrich, Buffon denies to be an Ostrich; but later naturalists admit it to be of the Struthio tribe.

It is chiefly found in Guiana, along the banks of the Oroonoko, in the inland provinces of Brazil and Chili, and the vast forests that border on the mouth of the river Plata. Many other parts of South America were known to have them; but as man multiplied, these large and timorous birds either fell beneath their superior power, or fled from their vicinity.

The Touyou, though not so large as the ostrich, is only second to it in magnitude. It is by much the largest bird in the New Continent; and is generally found to be six feet high, measuring from its head to the ground. Its legs are three feet long; and its thigh is near as thick as that of a man. Its body is of an oval form, and appears entirely round. It is covered from the back and rump with long feathers; these feathers are gray upon the back, and white on the belly, and it has no other tail. It goes very swiftly, and seems assisted in its motion by a kind of tubercle behind, like a heel, upon which, on plain ground, it treads very securely: in its course it uses a very odd kind of action, lifting up one wing, which it keeps elevated for a time; till letting it drop, it lifts up the other: it runs with such swiftness, that the fleetest dogs are thrown out in the pursuit. One of them finding itself surrounded by the hunters, darted among the dogs with such fury,

that they made way to avoid its rage; and it escaped, by its amazing velocity, in safety to the mountains. It defends itself with its feet, and calls its young by a kind of hiss.

Nieremberg relates, that during incubation, they generally make a false nest at some distance from the true one; in this they lay two eggs, which are afterwards broken by the old bird, and by attracting a number of flies, beetles, &c. afford a means of sustenance to the young. This, however, may be considered as apocryphal.

When first hatched, the young ones are familiar, and follow the first person they meet. I have been followed myself, says Wafer, by many of these young ostriches; which at first are extremely harmless and simple: but as they grow older, they become more cunning and distrustful; and run so swift, that a greyhound can scarcely overtake them. Their flesh, in general, is good to be eaten; especially if they be young. It would be no difficult matter to rear up flocks of these animals tame, particularly as they are naturally so familiar: and they might be found to answer domestic purposes, like the hen or the turkey. Their maintenance could not be expensive, if, as Narborough says, they live entirely upon grass. Like the Ostrich, the Touyou is indiscriminately voracious; swallowing stones, iron, and other hard substances.

THE CASSOWARY

Is a bird which was first brought into Europe by the Dutch, from Java, in the East Indies. It is a native of the ultra Gangetic peninsula, and of the Indian archipelago.

The Cassowary, though not so large as the former, yet appears more bulky to the eye; its body being nearly equal, and its neck and legs much thicker and stronger in proportion; this conformation gives it



an air of strength and force, which the fierceness and singularity of its countenance conspire to render formidable. That which has been described by the gentlemen of the Academy was five feet and a half from the point of the bill to the extremity of the claws; and the legs were two feet and a half high, from the belly to the end of the back. In other birds, a part of the feathers serve for flight, and are different from those that serve for mere covering; but in the Cassowary, all the feathers are of the same kind, and outwardly of the same colour. They are generally double; having two long shafts, growing out of a short one, which is fixed in the skin. The beards that adorn the stem or shaft, are about half way to the end, very long, and as thick as a horse-hair, without being subdivided into fibres. The stem or shaft is flat, shining, black, and knotted below; and from each knot there proceeds a beard: likewise,

the beards at the end of the large feathers are perfectly black ; and towards the root of a gray tawny colour ; shorter, more soft, and throwing out fine fibres, like down : so that nothing appears except the ends, which are hard and black ; because the other part, composed of down, is quite covered. There are feathers on the head and neck ; but they are so short, and thinly sown, that the bird's skin appears naked, except towards the hinder part of the head, where they are a little longer. The wings, when they are deprived of their feathers, are but three inches long. The ends of the wings are adorned with five prickles, of different lengths and thickness, which bend like a bow : these are hollow from the roots to the very points, having only that slight substance within, which all quills are known to have. The longest of these prickles is eleven inches ; and it is a quarter of an inch in diameter at the root, being thicker than towards the extremity ; the point seems broken off.

The part, however, which most distinguishes this animal is the head ; this, though small, like that of an ostrich, does not fail to inspire some degree of terror. It is bare of feathers, and is in a manner armed with a helmet of horny substance, that covers it from the root of the bill to near half the head backwards. This helmet is black before and yellow behind. Its substance is very hard, being formed by the elevation of the bone of the skull : and it consists of several plates, one over another, like the horn of an ox. Some have supposed that this was shed every year with the feathers ; but the most probable opinion is, that it only exfoliates slowly like the beak. To the peculiar oddity of this natural armour may be added the colour of the eye in this

animal, which is a bright yellow, and the globe being above an inch and a half in diameter, gives it an air equally fierce and extraordinary. At the bottom of the upper eyelid, there is a row of small hairs, over which there is another row of black hair, which look pretty much like an eyebrow. The sides of the head, about the eye and ear, being destitute of any covering, are blue, except the middle of the lower eyelid, which is white. The neck is of a violet colour, inclining to that of slate; and it is red behind in several places, but chiefly in the middle. About the middle of the neck before, at the rise of the large feathers, there are two projections formed by the skin, which resemble somewhat the gills of a cock, but that they are blue as well as red. The skin which covers the fore part of the breast, on which this bird leans and rests, is hard, callous, and without feathers. The thighs and legs are covered with feathers, and are extremely thick, strong, and straight; but the legs are thicker a little above the foot than in any other place. The toes are covered with scales, and are but three in number; for that which should be behind is wanting.

Thus formed for a life of hostility, for terrifying others, and for its own defence, it might be expected that the Cassowary is one of the most fierce and terrible animals of the creation. But nothing is so opposite to its natural character, nothing so different from the life it is contented to lead. It never attacks others; and instead of the bill, when attacked, it rather makes use of its legs, and kicks like a horse, or runs against its pursuer, beats him down, and treads him to the ground.

The manner of going of this animal is not less extraordinary than its appearance. Instead of going

directly forward, it seems to kick up behind with one leg, and then making a bound onward with the other, it goes with such prodigious velocity, that the swiftest racer would be left far behind.

The same degree of voraciousness which we perceive in the ostrich obtains as strongly here. The Cassowary swallows every thing that comes within the capacity of its gullet. The Dutch assert, that it can devour not only glass, iron, and stones, but even live on burning coals, without testifying the smallest fear, or feeling the least injury. It is said that the passage of the food through its gullet is performed so speedily, that even the very eggs which it has swallowed whole pass through it unbroken, in the same form they went down. The Cassowary's eggs are of a gray ash colour, inclining to green. The largest is found to be fifteen inches round one way, and about twelve the other. The voice of this bird resembles the grunting of a hog.

The southern parts of the most eastern Indies seem to be the natural climate of the Cassowary. His domain, if we may so call it, begins where that of the ostrich terminates. The latter has never been found beyond the Ganges: while the Cassowary is never seen nearer than the islands of Banda, Sumatra, Java, the Molucca islands, and the corresponding parts of the continent.

THE NEW HOLLAND EMEU.

THIS bird has been so scientifically described by Mr. Bennett, from specimens in the Tower, that we cannot do better than to adopt his description. "The distinctive generic characters of the New Holland Emeu, which forms part of the ostrich family,

and is, with the sole exception of the ostrich, the largest bird known to exist, consist in the flattening of its bill from above downwards, instead of from side to side; in the absence of the bony process which crests the head of the cassowary, of the wattles which depend from his neck, and of the long spur-like shafts which arm his wings; and in the equal, or nearly equal, length of all his claws. The Emeus,



however, agree with the cassowaries in the number of their toes, three on each foot, all of them directed forwards, and extremely thick and short, the posterior toe, which is common in most of the order, being in them entirely wanting; in the excessive shortness of their wings, which do not even, as is the case with the ostriches, assist them in running, much less in flight, of which, in common with the latter, they are absolutely incapable; and in the structure of their feathers, which are for the most part double, each

tube being divided near its origin into two shafts, the barbs of which are soft, downy, and distinct from each other, and assume at a distance rather the appearance of a silky covering of hair than that of the common plumage of birds.

“The New Holland bird has the head and upper part of the neck thinly covered with slender black feathers; the space around the ears being alone left bare, and exhibiting, as well as the neck and throat, which are but partially concealed by the scattered plumage with which they are provided, the blue tinge of the skin. The general colour of the plumage is grayish brown above, with a more plentiful intermixture of the gray, and a consequently lighter tinge beneath. The young are striped longitudinally with brown and gray. Their bill is black, and their legs are remarkably thick and of a dull brown. The great length of the latter and of the neck, and the erect attitude and quiet demeanour of these birds, which sometimes attain as much as seven feet in height, give them altogether a noble and imposing appearance. They were formerly common in the neighbourhood of Botany Bay, subsisting, like the rest of their tribe, upon vegetable substances, chiefly fruits. They are extremely wild, and run with great swiftness when pursued; outstripping, it is said, the fleetness of the greyhound. Like the kangaroos, they are sometimes hunted by the colonists as articles of food; and their flesh is stated to have much of the flavour of beef. The quantity of provision supplied by one of these birds is by no means inconsiderable.

“The animals of the part of New Holland from which these birds are derived appear in general to suffer little from their transportation to the climate of

England. The Emeus, like the kangaroos, have become to a certain extent naturalized in the Royal Park at Windsor, where they breed without difficulty and with no extraordinary precautions. Here they have assigned to them a sufficient space of ground to take ample exercise; and this circumstance contributes not a little to the thriving condition in which they are met with. They are perfectly harmless unless when irritated or pursued, in which case they sometimes strike very severe blows with their beaks, which are extremely hard. The pair in the Tower were obtained from this establishment, where they were bred."



THE HOODED DODO.

SWIFTNESS is generally considered as the peculiar attribute of birds, but the Dodo, instead of exciting that idea by its appearance, seems to strike the imagination as a thing the most unwieldy and inactive of all nature. Its body is massive, almost cubical, and covered with gray feathers; it is just barely supported upon two short thick legs like pillars. The neck, thick and puffy, is joined to the head, which consists of two great chaps, that open far

behind the eyes, which are large, black, and prominent; so that the animal, when it gapes, seems to be all mouth. The bill therefore is of an extraordinary length, not flat and broad, but thick, and of a bluish white, sharp at the end, and each chap crooked in opposite directions. From all this results a stupid and voracious physiognomy; which is still more increased by a bordering of feathers round the root of the beak, and which give the appearance of a hood or cowl. The Dodo is furnished with wings, covered with soft ash-coloured feathers, but they are too short to assist it in flying. It is furnished with a tail, and with a few small curled feathers; but this tail is disproportioned and displaced. Its legs are too short for running, and its body too fat to be strong.

This bird is a native of the Isle of France; and the Dutch, who first discovered it there, called it in their language the *nauseous bird*, as well from its disgusting figure, as from the bad taste of its flesh. However, succeeding observers contradict this last report, and assert that its flesh is good and wholesome eating. It is a simple bird, and is very easily taken. Three or four Dodos are enough to dine a hundred men.

THE SOLITARY, AND THE NAZARENE.

THE first of these is a large bird, which inhabits the Isle of Rodriguez, and receives its name from its solitary habits, scarcely more than two being ever found together. The male is said to weigh sometimes forty-five pounds. It has some relation to the turkey, but its bill is more bent, and it stands higher on its legs than that bird. The colour of its plumage

is gray and brown mixed, and it has scarcely any tail. The wings are too short for flight, and the bone of the pinion swells out into a kind of round knob. The females are sometimes covered with light yellow feathers, and sometimes with brown; and they have also a widow's peak above the bill. They lay only one egg, and sit seven weeks. The nest is made in by-places, of the leaves of the palm. It is said that a stone is always found in the gizzard both of this bird and the dodo; it is however, probably only of the same kind, and for the same purpose, as those which are found in all granivorous birds, and serves merely to prove them of that kind. They are hunted from March to September, and being then very fat, the young ones are much esteemed as food.

The NAZARENE is found at present in the Isle of France, though it evidently takes its name from having been originally a native of the Isle of Nazareth. It is larger than the swan, with the bill bent a little downwards. Instead of feathers, it is covered with black down; but the wings are feathered, and there are some frizzled feathers on the rump. The legs are scaly, with three toes to each foot. The female lays but one egg, and Fr. Cauche tells us that there is always found with it in the nest a white stone of the size of a hen's egg.

Both these last mentioned birds are of the dodo genus.

Of Rapacious Birds.

THE GOLDEN EAGLE

Is the largest and noblest of all those birds that have received the name of Eagle. The length of the female is three feet and a half; the extent of its

wings, eight and a half; it weighs from sixteen to eighteen pounds; but the male seldom weighs more than twelve pounds⁵. Its bill is three inches long, and of a deep blue; and the eye of a very brilliant



hazel colour. The sight and sense of smelling are very acute. The head and neck are clothed with narrow, sharp-pointed feathers, of a deep brown colour, bordered with tawny; but those on the crown of the head, in very old birds, turn gray. The whole body, above as well as beneath, is of a dark brown; and the feathers of the back are finely clouded with a deeper shade of the same. The wings when clothed reach to the end of the tail. The quill feathers are of a chocolate colour, the shafts white. The tail is of a deep brown, irregularly barred and blotched with an obscure ash colour,

⁵ Among the birds of prey the female is generally larger than the male.

and usually white at the roots of the feathers. The legs are yellow, short, and very strong, being three inches in circumference, and feathered to the very feet. The toes are covered with large scales, and armed with the most formidable claws, the middle of which are two inches long.

In the rear of this terrible bird follow the *Sea Eagle*, the *Osprey*, the *Common Eagle*, the *Bald Eagle*, the *White Eagle*, the *Rough-footed Eagle*, the *Crowned Eagle*, &c. These, and others that might be added, form different shades in this fierce family; but have all the same rapacity, the same general form, the same habits, and the same manner of bringing up their young.

In general, all these birds are found in the mountainous and ill peopled countries, and breed among the loftiest cliffs. They choose those places which are remotest from man, upon whose possessions they but seldom make their depredations, being contented rather to follow the wild game in the forest, than to risk their safety to satisfy their hunger.

It requires great patience and much art to tame an eagle; and even though taken young, and brought under by long assiduity, yet still it is a dangerous domestic, and often turns its force against its master. When brought into the field for the purposes of fowling, the falconer is never sure of its attachment: the innate pride, and love of liberty, still prompt it to regain its native solitudes; and the moment the falconer sees it, when let loose, first stoop towards the ground, and then rise perpendicularly into the clouds, he gives up all his former labour for lost; quite sure of never beholding his late prisoner more. Sometimes, however, they are brought to have an attachment for their feeder: they are then highly

serviceable, and liberally provide for his pleasures and support. When the falconer lets them go from his hand, they play about and hover round him till their game presents, which they see at an immense distance, and pursue with certain destruction. They have, however, never been used in European falconry. It is only in the east that they have been so employed.

Of all animals the Eagle flies highest, and on this account he was called by the ancients the bird of Jove. When M. Ramond ascended Mont Perdu, in the Pyrenees, nearly three miles above the level of the sea, he saw a golden eagle far above him, dashing rapidly to windward against a strong gale. Of all birds also, the Eagle has the quickest eye; but his sense of smelling is far inferior to that of the vulture. He never pursues, therefore, but in sight: and when he has seized his prey, he stoops from his height, as if to examine its weight, always laying it on the ground before he carries it off. As his wing is very powerful, yet, as he has but little suppleness in the joints of the leg, he finds it difficult to rise when down; however, if not instantly pursued, he finds no difficulty in carrying off geese and cranes. He also carries away hares, lambs, and kids; and often destroys fawns and calves, to drink their blood, and carries a part of their flesh to his retreat. Infants themselves, when left unattended, have been destroyed by these rapacious creatures; which probably gave rise to the fable of Ganymede's being snatched up by an eagle to heaven.

An instance is recorded in Scotland of two children being carried off by eagles: but fortunately they received no hurt by the way; and, the eagles being pursued, the children were restored unhurt out of the nests to the affrighted parents.

The Eagle is thus at all times a formidable neighbour; but peculiarly so when bringing up its young. It is then that the female, as well as the male, exert all their force and industry to supply their young. Smith, in his History of Kerry, relates, that a poor man in that country got a comfortable subsistence for his family, during a summer of famine, out of an Eagle's nest, by robbing the Eaglets of food, which were plentifully supplied by the old ones. He protracted their assiduity beyond the usual time, by clipping the wings, and retarding the flight of the young.

It happened some time ago, in the same country, that a peasant resolved to rob the nest of an Eagle, that had built in a small island, in the beautiful lake of Killarney. He accordingly stripped and swam in upon the island, while the old ones were away: and, robbing the nest of its young, he was preparing to swim back, with the Eaglets tied in a string; but, while he was yet up to his chin in the water, the old Eagles returned, and, missing their young, quickly fell upon the plunderer, and, in spite of all his resistance, dispatched him with their beaks and talons.

In order to extirpate these pernicious birds, there is a law in the Orkney Islands, which entitles any person that kills an Eagle to a hen out of every house in the parish in which the plunderer is killed.

The nest of the Eagle is usually built in the most inaccessible cliff of the rock, and often shielded from the weather by some jutting crag that hangs over it. Sometimes, however, it is wholly exposed to the winds, as well sideways as above; for the nest is flat, though built with great labour. It is said that the same nest serves the Eagle during life; and indeed the pains bestowed in forming it seems to argue

as much. It is asserted, that as soon as the young ones are somewhat grown, the mother kills the most feeble or the most voracious. If this happens, it must proceed only from the necessities of the parent, who is incapable of providing for their support; and is content to sacrifice a part to the welfare of the majority. After a male and female have paired, they remain together for life, and never change their place of abode.

The plumage of the Eaglets is not so strongly marked as when they come to be adult. They are at first white; then inclined to yellow; and at last light brown. Age, hunger, long captivity, and diseases, make them whiter. It is said that they live above a hundred years: and that they at last die, not of old age, but from the beak turning inward upon the under mandible, and thus preventing their taking any food. They are indeed equally remarkable for their longevity and for their power of sustaining a long absence from food. One of this species, which was lately nine years in the possession of Mr. Owen Holland, of Conway, lived thirty-two years with the gentleman who made him a present of it; but what its age was when the latter received it from Ireland is unknown. The same bird also furnishes a proof of the truth of the other remark; having once, through the neglect of servants, endured hunger for twenty-one days, without any sustenance whatever. But this is still less extraordinary than an instance recorded by our author, M. de Buffon, who was assured, by a person of veracity, that one of these birds being caught in a fox-trap, existed for five entire weeks without aliment. It showed no appearance of languor till the last eight days, and it was killed at length in order to deliver it from its sufferings. The Eagle seldom drinks, as its principal

aliment is raw flesh, which contains in itself a sufficient quantity of moisture.

Such are the general characteristics and habitudes of the Eagle: however, in some these habitudes differ, as the Sea Eagle and the Osprey live chiefly upon fish. They catch their prey, which is chiefly fish, by darting down upon them from above. The Italians compare the violent descent of these birds on their prey to the fall of lead into water; and call them by the name of *Aquila Piombina*, or the Leaden Eagle.

Nor is the Bald Eagle, which is an inhabitant of North Carolina, less remarkable for habits peculiar to itself. These birds fly very heavily; so that they cannot overtake their prey, like others of the same denomination. To remedy this, they often attend the osprey, which they attack as soon as it has seized a fish; the osprey, therefore, being glad to escape by dropping the fish, with astonishing dexterity this bird seizes the unmerited prey, before it reaches the water.

These Eagles also generally attend upon fowlers in the winter; and when any birds are wounded, they are sure to be seized by the Eagle, though they may fly from the fowler. This bird will often steal young pigs, and carry them alive to the nest, which is composed of twigs, sticks, and rubbish: it is large enough to fill the body of a cart; and is commonly full of bones half eaten, and putrid flesh, the stench of which is intolerable.

THE GREAT SEA EAGLE,

Called the Erne in Scotland, is usually above three feet in length, and the wings, when expanded, measure seven or eight feet. The bill, yellow at the base,

is generally of a bluish black colour towards the extremity. A blackish brown, deeper above than beneath, is the common hue of the bird, which is relieved by numerous white spots on the breast and under parts. Of his wings the larger feathers are nearly black, but those of the tail have a less deep tinge. It is found in the northern regions of both continents, even to the very margin of the polar ice, and in Asia as far to the south as the Caspian Sea. Fishing is the Sea Eagle's regular means of subsistence, but, on occasion, it will pick up dead fish on the beach, and attack seals and land animals. "Few exhibitions in nature (says the author of the *British Naturalist*) are finer than the fishing of this powerful bird. Not adapted for walking into the shallow water for prey like the heron, the Sea Eagle courses over the surface. From her unapproachable haunt in the trees or the crags,—the latter is, when she can obtain it, her most admired residence—she darts forth with the straightness and fleetness of an arrow, and as she glides high in the air, scanning the expanse of miles with her clear and unerring vision, one or two motions of her wings are sufficient to elevate her almost above the reach of human eyes, or bring her down close to the surface of the water. When her prey appears within her reach, she pauses not an instant, but raising her broad wings upwards against the air, and thus taking advantage of the elasticity of both, shoots down as if discharged from a bow or an airgun, makes the cliff echo to her cherrup, and dashes upon the water with the same thunder and spray as if a lightning-rent fragment had been precipitated from the height. For an instant the column of spray conceals her, but she soon ascends, bearing the prey in her talons, and

brief space elapses before she is lost in the distance."

As this Eagle will eat carrion, it is used as a bait to catch him in Sutherlandshire. A miniature house, or at least the wall part of it, is built on ground frequented by the Eagle, and an opening left at the foot of the wall sufficient for the egress of the bird. To the outside of this opening a bit of strong cord is fixed, with a noose formed on one end, and the other end returning through the noose. After all this operation is finished, a piece of carrion is thrown into the house, which the Eagle finds out and perches upon. It eats voraciously; and when it is fully satiated, it never thinks of taking its flight immediately upwards, unless disturbed, provided it can find an easier way to get out of the house; for it appears that it is not easy for it to begin its flight but in an oblique direction; consequently, it walks deliberately out at the opening left for it, and the noose catches hold of and fairly strangles it.

THE OSPREY.

THIS bird and the Sea Eagle have often been confounded with each other. They are, however, very different. The Osprey, both male and female, is much smaller than the Sea Eagle; the *tarsi* of the Osprey are scaly and naked, while those of the Sea Eagle are feathered part of the way; the Osprey may be trained to catch fish for its keeper, but the Sea Eagle will not serve a master.

The beak of the Osprey is of a bluish black, rather straight towards the base, and the point remarkably hooked. Of the upper part the general colour is brown, with the marginal feathers a little paler. On

the crown of the head the feathers are edged with white, and the back of the head and the nape of the neck are entirely white. From this latter circumstance, it has obtained, though erroneously, the name of the Bald Buzzard. The whole plumage is close and glossy, resembling that of waterfowl. The legs are short and of great strength; the tarsi black and scaly; the lower parts of the toes are very much tuberculated, and the claws black and remarkably



strong. It builds its nest on tall trees or cliffs near the water. Fish is its chief food. "When looking out for prey, it hovers over the surface of the water, at a considerable height, with its wings continually in motion, and when the prey appears, it darts down with so much force, that it plunges fairly into the water to the depth of a foot or two; and then springs buoyant to the surface, ascends the air, and soars off to a resting place on the woods or on the cliff, according to the situation, dashing the spray from its feathers as it flies."

THE BEARDED GRIFFIN.



THIS bird occupies an intermediate place, between the eagles and the vultures, being allied to the first by general appearance and external form, and to the second by internal structure and habits. It is the largest European bird of prey, and it builds its aiery among the loftiest precipices of almost all the Alpine chains of our continent. Notwithstanding its strength and magnitude, it is not courageous; for it attacks only such animals as are likely to become easy victims. Like the vulture it will gorge to excess upon carrion.

The Bearded Griffin takes its name from the tuft of bristly hairs which arise partly from the cere that covers the base of the beak, and partly from the under mandible, and are directed outwards and downwards, so as to appear like a beard. His

beak, which is strongly arched at the extremity, is remarkable for its vertical thickness. The general tint of his plumage is a blackish brown above and grayish fawn beneath, and with the latter colour his legs are feathered down to the very toes.



THE BLACK, OR COMMON EAGLE.

THIS bird is found in all climates, hot as well as cold, and usually inhabits the most perpendicular and inaccessible rocks. It is about two feet ten inches in length, and the general colour of its plumage is blackish. The head and upper parts of the neck are, however, mixed with yellow, while the lower half of the tail is white with blackish spots, the other half blackish. It is so powerful as to be able to kill a dog that is much larger than itself. The Abbé Spallanzani having forced one of these animals into an apartment where he kept an Eagle, “the bird immediately ruffled the feathers on its head and neck, cast a dreadful look at its victim, and, taking a short flight, immediately alighted on its back. It held the neck firmly with one foot, by which the dog was prevented from turning his head to bite, and with the other grasped one of his flanks, at the same time driving its talons into the body; and in this attitude it continued, till the dog expired

with fruitless cries and efforts. The beak, which had hitherto been unemployed, was now used for making a small hole in the skin : this was gradually enlarged ; and from this, the bird began to tear away and devour the flesh, and went on till he was satisfied." Little can be said for the humanity of the man who thus satisfied his curiosity, as to the mode in which the Eagle attacks its prey.

The distinctive marks of other species are as follow :—

The **BALD EAGLE** : brown : the head, neck, and tail feathers white ; the feathers of the upper part of the leg brown. Its length is three feet three inches. Inhabits both Europe and America.

The **WHITE EAGLE** : the whole white. But probably all White Eagles are only varieties.

The **ROUGH-FOOTED EAGLE** : of a dirty brown : spotted under the wings, and on the legs, with white : the feathers of the tail white at the beginning and the point ; the leg-feathers dirty brown, spotted with white. This Eagle is very small, being not more than two feet and a half in length. It is remarkable for its plaintive cry.

The **WHITE-TAILED EAGLE** : dirty brown : head white : the stems of the feathers black ; the rump inclining to black ; the tail-feathers, the first half black, the end half white ; legs naked.

The **JEAN LE BLANC** : above, brownish gray ; below, white, spotted with tawny brown ; the tail feathers on the outside, and at the extremity, brown ; on the inside, white, streaked with brown ; legs naked. Its length is about two feet, and it weighs from three pounds four ounces to three pounds seven ounces. It is common in France, but is rarely known elsewhere. It makes its nest on the ground *among heath, &c.*

The EAGLE OF BRAZIL: blackish brown: ash colour, mixed in the wings; tail feathers white; legs naked.

The OROONOKO EAGLE: with a topping, above, blackish brown; below, white, spotted with black; upper neck yellow; tail feathers brown, with white circles; leg feathers white, spotted with black.

The CROWNED AFRICAN EAGLE: with a topping: the tail of an ash colour, streaked on the upper side with black.

The EAGLE OF PONDICHERRY: chestnut colour, the six outward tail feathers black one half.

Besides these, authors have enumerated the CHINESE EAGLE, which is a most beautiful bird, of a reddish brown, with a bar of dark brown across the middle of the wing; the WHITE-BELLIED EAGLE; the JAPANESE EAGLE, which is finely variegated; the ORIENTAL EAGLE; the JAVAN EAGLE; the FIERCE EAGLE, from Astracan; the PLAINTIVE EAGLE, from Terra del Fuego; the BLACK-CHEEKED EAGLE; the SPOTTED EAGLE; the STATENLAND EAGLE; the RUSSIAN and EQUINOCTIAL EAGLES, and the MANSFEURY. Most of these take their names from their characteristic quality; and, indeed, minutely to describe them would greatly extend the volume, without adding much to the entertainment of the reader.



THE CONDOR.

OF all the birds which are endowed with the power of flight, the Condor must be allowed universally to be the largest. It also possesses, in a higher degree than any of the feathered tribe, all the qualities that render it formidable, not only to animals of its own kind, but to beasts, and even to man himself. It has been said to be eighteen feet across the wings when extended, but it is doubtful whether it ever acquires nearly that magnitude. The beak is so strong as to pierce the body of a cow: and two of them are able to devour it. The Indians assert, that they will carry off a deer or a young calf in their talons, as eagles a hare or a rabbit. They seldom frequent the forests, as they require a large space for the display of their wings; but are found on the seashore, and the banks of rivers, whither they descend, at certain seasons, from the heights of the mountains. Condamine has frequently seen them in several parts of the mountains of Quito, and observed them hovering over flocks of sheep; and he thinks they would, at a certain time, have attempted to carry one off, had they not been scared away by the shepherds. The Condor is of a brown colour; round the neck they have often a white ruff; and on their head a brown comb, which, however, is not indented like the cock. It has by most naturalists been classed among the vultures, on account of its neck and head, which are bare of feathers; but if we judge by its natural habits, and internal qualities, we should rather place it among the eagles, whom it rivals in fierceness as well as in courage.

It is doubted whether this animal be proper to

America only, or whether it may not have been described by the naturalists of other countries. It is supposed, that the great bird, called the roc, described by Arabian writers, and so much exaggerated by fable, is but a species of the Condor. In the deserts of Pachomac, where it is chiefly seen, men seldom venture to travel. Those wild regions are very sufficient of themselves to inspire a secret horror: broken precipices—prowling panthers—forests only vocal with the hissing of serpents—and mountains rendered still more terrible by the Condor, the only bird that ventures to make its residence in those deserted situations.

THE VULTURE.



THE first rank among birds of prey has been assigned to the eagle, not because it is larger than the Vulture, but because it is more noble and courageous; and possesses, at least, as much an inclination for war as an appetite for prey; the Vulture is deficient in all

the more respectable qualities of the eagle, and only rivals it in size, in strength, and rapacity.

The GOLDEN VULTURE, which, if we except the condor, seems to be at the head of the tribe, is about four feet and a half long, from the end of the beak to that of the tail. The head and neck are covered only with a few scattered hairs, and the latter is covered with a red skin, which at a distance gives to the creature the look of a turkey; and the eyes are more prominent than those of the eagle. The whole plumage is dusky, mixed with purple and green; the legs are of a dirty flesh colour, and the claws are black.

Vultures may be easily distinguished from all those of the eagle kind, by the nakedness of their heads and necks, which are without feathers, and only covered with a very slight down, or a few scattered hairs. Their eyes are more prominent; those of the eagle being buried more in the socket. The claws are shorter, and less hooked. The inside of the wing is covered with a thick down, which is different in them from all other birds of prey. Their attitude is not so upright as that of the eagle; and their flight more difficult and heavy.

They are still more strongly marked by their nature, which in all Vultures is cruel, unclean, and indolent. Their sense of smelling, however, is amazingly great; and Nature, for this purpose, has given them two large apertures or nostrils without and an extensive olfactory membrane within. They seem adapted inwardly, not only for being carnivorous, but to eat corn, or whatever of that kind comes in their way.

This bird, which is common in many parts of Europe, and but too well known on the western

continent, is totally unknown in England. In Egypt, Arabia, and many other kingdoms of Africa and Asia, Vultures are found in great abundance. The inside down of their wing is converted into a warm and comfortable kind of fur, and is commonly sold in the Asiatic markets.

In Egypt, indeed, this bird seems to be of singular service. There are great flocks of them in the neighbourhood of Grand Cairo, which no person is permitted to destroy. The service they render the inhabitants is devouring all the carrion and filth of that great city; which might otherwise tend to corrupt and putrefy the air. They are commonly seen in company with the wild dogs of the country, tearing a carcass very deliberately together. This odd association produces no quarrels; the birds and quadrupeds seem to live amicably, and nothing but harmony subsists between them. The wonder is still the greater, as both are extremely rapacious, and both lean and bony to a very great degree; probably having no great plenty even of the wretched food on which they subsist.

In America, they lead a life somewhat similar. Wherever the hunters, who there only pursue beasts for the skins, are found to go, these birds are seen to pursue them. They still keep hovering at a little distance; and when they see the beasts flayed and abandoned, they call out to each other, pour down upon the carcass, and, in an instant, pick its bones as bare and clean as if they had been scraped by a knife.

The sloth, the filth, and wretchedness of these birds almost exceed credibility. In the Brazils, where they are found in great abundance, when they light upon a carcass, which they have liberty

to tear at their ease, they so gorge themselves that they are unable to fly ; but keep hopping along when they are pursued. At all times, they are a bird of slow flight, and unable readily to raise themselves from the ground ; but, when they have overfed, they are then utterly helpless ; but they soon get rid of their burthen ; for they have a method of vomiting up what they have eaten, and then they fly off with greater facility.

It is pleasant to be a spectator of the hostilities between animals that are thus hateful or noxious. Of all creatures, the two most at enmity are the Vulture of Brazil and the crocodile. The female of this terrible amphibious creature, which in the rivers of that part of the world grows to the size of twenty-seven feet, lays its eggs, to the number of one or two hundred, in the sands, on the side of the river, where they are hatched by the heat of the climate. For this purpose, she takes every precaution to hide from all other animals the place where she deposits her burthen : in the mean time, a number of Vultures sit, silent and unseen, in the branches of some neighbouring forest, and view the crocodile's operations, with the pleasing expectation of succeeding plunder. They patiently wait till the crocodile has laid the whole number of her eggs, till she has covered them carefully with the sand, and until she is retired from them to a convenient distance. Then, altogether, encouraging each other with cries, they pour down upon the nest, hook up the sand in a moment, lay the eggs bare, and devour the whole brood without remorse. Wretched as is the flesh of these animals, yet men, perhaps, when pressed by hunger, have been tempted to taste it. Nothing can be more lean, stringy, nauseous, and unsavoury. It is in vain

that, when killed, the rump has been cut off; in vain the body has been washed, and spices used to overpower its prevailing odour: it still smells and tastes of the carrion by which it was nourished, and sends forth a stench that is insupportable. These birds, at least those of Europe, usually lay two eggs at a time, and produce but once a year. They make their nests in inaccessible cliffs, and in places so remote that it is rare to find them.

The most remarkable species of the Vulture are as follow:—

THE FULVOUS VULTURE, OR GRIFFON.



IT is about three feet six inches in length, and eight feet in the wings. The head, neck, and ruff are white; the back reddish gray; the quills and tail of a blackish brown; the breast bare of feathers, and covered with downy hair. The beak and claws are

nearly black. He is a native of the greater part of Europe and Asia, and during the summer inhabits the most elevated regions, building his nest in the rocks and among inaccessible precipices. In the winter he is believed to migrate to more temperate climates.



The **AQUILINE** or **EGYPTIAN VULTURE**, or **Pernopter**. The male of this, Linnæus says, is wholly white, except the quill feathers; those are black with hoary edges, all but the two outer ones, which are entirely black. The female is quite brown, except the four outer quills, which are black. In size it exceeds the common eagle. They fly in troops, and are very useful in destroying rats and mice.

The **HARE VULTURE** is smaller than all the preceding. It is of a shining reddish black; the breast inclining to yellow. It is found in many parts of Europe and Asia. When it is sitting or standing, it erects a crest on its head, which does not appear when it flies.

The **ASH-COLOURED** or **SMALL VULTURE** is the size of a small cock. It is generally of a sooty gray, spotted with chestnut, and the head and neck white. One which was received from Norway had

the head and neck bare, and of a reddish colour, and the body almost entirely white, except the quills, which were black.

Of those birds which may be accounted foreign, that which is called the **KING VULTURE** greatly demands preeminence. It is the size of a hen turkey. The head and neck are entirely bare of feathers, but a fillet of blackish down encompasses the head. At the bottom of the neck, just above the shoulders, there is a ruff of ash-coloured feathers. The body is a reddish brown; the belly white, with a tinge of yellow; and the quills are black. It is a native of South America and the West Indies.

The **CARRION VULTURE**, or **TURKEY BUZZARD**, is the next in order and consequence. They are found in vast flocks in all parts of America, where they are of great utility in destroying snakes and vermin, and in devouring the dead and putrid carcasses. This bird is about the size of a turkey. The head and neck are bare of feathers, and of a reddish colour, and the sides of the head warted like those of the turkey. The whole plumage is a brownish black, with a purple and greenish gloss in different directions.

But of all the birds of this genus, the **SECRETARY** is the most elegant.

This curious bird resembles the common falcon in its head, bill, and claws; but its legs are so long that, when it stands upright, it is not much unlike the crane. After much hesitation, modern naturalists have arranged it in the Vulture order. When standing erect, it measures about three feet from the top of the head to the ground. It is a native of the interior of Africa, Asia, and the Philippine Islands. The general colour of the plumage is a bluish ash;

the tips of the wings, the thighs, and the vent inclining to black. On the back of the head are several long dark-coloured feathers, hanging down behind, and capable of being erected at pleasure. This crest induced the Dutch colonists at the Cape



to give it the name of the Secretary ; the Hottentots, however, style it the Serpent-eater, from the avidity with which it catches and devours those noxious reptiles. The manner in which it seizes them displays great intelligence. On approaching them, it carries forward the point of one of its wings, in order to parry their venomous bites, and waits till it finds an opportunity of spurning or treading on its adversary, or taking him on its pinions, and throwing him into the air. When he has at last thus wearied him out, he kills and devours him at his leisure.

M. le Vaillant witnessed one of these combats. Finding itself inferior in strength, the serpent en-

deavoured to regain his hole, but the falcon, by a single leap, got before him and cut off his retreat. On whatever side the reptile strove to escape, the enemy still faced him. The serpent then erected himself to intimidate the bird, and, hissing dreadfully, displayed his menacing throat, inflamed eyes, and a head swoln with rage and venom. Sometimes this produced a momentary suspension of hostilities; but the bird soon returned to the charge, and, covering her body with one of her wings as a buckler, struck her enemy with the bony protuberance of the other. The serpent at last dropped, and the bird laid open his skull with one stroke of her beak.

This singular bird may easily be tamed, and it becomes very domestic and familiar. Though, if severely pinched with hunger, it will then devour ducklings and chickens; yet, if well fed, it will live with the poultry on amicable terms, and when it sees any of them quarreling, will run to part the combatants. Unlike all the rest of the feathered race, these birds always strike forward with their legs when they fight.



Besides these, naturalists have mentioned the **CRESTED VULTURE**, the **ARABIAN VULTURE**, the **BEARDED VULTURE**, the **BLACK VULTURE**, the **ANGOLA**, and the **BENGAL VULTURES**, the **TAWNY VULTURE**, &c.

THE FALCON.

FALCONRY, which is now so much disused among us, was the principal amusement of our ancestors. A person of rank scarcely stirred out without his Hawk on his hand, which in old paintings is the criterion of nobility. The expense which attended this sport was very great: among the old Welsh princes, the king's falconer was the fourth officer in the state; but, notwithstanding all his honours, he was forbidden to take more than three draughts of beer from his horn, lest he should get drunk and neglect his duty. In the reign of James the First, Sir Thomas Monson is said to have given a thousand pounds for a cast of Hawks; and such was their value in general, that it was made felony in the reign of Edward the Third to steal a Hawk. To take its eggs, even in a person's own ground, was punishable with imprisonment for a year and a day, together with a fine at the king's pleasure.

Of many of the ancient Falcons used for this purpose, we at this time know only the names. Of those in use at present, both here and in other countries, are the Gyr-falcon, the Falcon, the Lanner, the Sacre, the Hobby, the Kestrel, and the Merlin. These are called the long-winged Hawks, to distinguish them from the Goshawk, the Sparrowhawk, the Kite, and the Buzzard, that are of shorter wing, and either too slow, too cowardly, too indolent, or too obstinate, to be serviceable in contributing to the pleasure of the field.

The GYR-FALCON leads in this bold train. In size he exceeds all other Falcons, for he approaches nearly to the magnitude of the eagle. The top of the head is flat, and of an ash colour, with a strong,

thick, short, and blue beak. The feathers of the beak and wings are marked with black spots, in the shape of a heart. He is a courageous and fierce bird, nor fears even the eagle himself; but he chiefly flies at the stork, the heron, and the crane. He is most found in the colder regions of the north, but loses neither his strength nor his courage when brought into the milder climates.

THE FALCON,



PROPERLY so called, is the second in magnitude and fame. There are some varieties in this bird; but there seem to be only two that claim distinction, the *Falcon-gentil* and the *Peregrine Falcon*. Both are much less than the gyr, and somewhat about the size of a raven. The Falcon is a native of the cold climates of the north, but it is never seen in warm and seldom in temperate climates. It will, however, bear to be transported from Iceland and Russia into France and Italy, and even into Persia and Turkey, without losing its strength or its vivacity. Next to the eagle it is the most formidable, active, and intrepid of all voracious birds. It boldly attacks

the largest of the feathered race; the stork, the heron, and the crane, are easy victims. Hares it kills by darting directly upon them. The general colour of the plumage is white, but spotted with brown. The Peregrine Falcon is marked on the upper parts of the body with bars of blue and yellow; the breast is of a yellowish white, with a few dusky lines; and the belly, thighs, and vent, are of a grayish white, crossed with dusky bands.

Next in size to these is the LANNER, a bird now very little known to Europe; then follows the SACRE, the legs of which are of a bluish colour, and serve to distinguish that bird; to them succeeds the HOBBY, used for smaller game, for daring larks, and stooping at quails. The KESTREL was trained for the same purpose; and last the MERLIN.

THE MERLIN



Is in size little larger than the blackbird, and is consequently the smallest of the Hawk kind. Its bill is blue; the cere and irides are yellow: the head is of a rust colour, streaked with black, and edged with rust colour: the quill feathers are dark, tipped and margined in the inner webs with reddish

white; the breast and belly are of a yellowish white, with streaks of rusty brown pointing downwards; the tail is long, and marked with alternate dusky and pale bars; the wings, when closed, do not reach quite to the end of the tail: the legs are yellow, and claws black.

Small as it is, this bird is not inferior in courage to any of the Falcon tribe. It was formerly used for taking larks, partridges, and quails, which it would frequently kill by a single blow, striking them on the breast, head, or neck. It differs from the Falcons, and all the rapacious kind, in the male and female being of the same size.

The courage of these creatures in general was such, that no bird, not very much above their own size, could terrify them; their swiftness so great, that scarce any bird could escape them; and their docility so remarkable, that they obeyed not only the commands, but the signs, of their master. They remained quietly perched upon his hand till their game was flushed, or else kept hovering round his head without ever leaving him but when he gave permission. The common Falcon is a bird of such spirit, that, like a conqueror in a country, he keeps all birds in awe and in subjection to his prowess. Where he is seen flying wild, the birds of every kind, that seemed entirely to disregard the kite or the sparrowhawk, fly with screams at his most distant appearance.

In order to train up a Falcon, the master begins by clapping straps upon his legs, which are called jesses, to which is fastened a ring with the owner's name, by which, in case he should be lost, the finder may know where to bring him back. To these also are added little bells, which serve to mark the place

where he is seen, if lost in the chase. He is always carried on the hand, and is obliged to be kept without sleeping. If he be stubborn, and attempts to bite, his head is plunged into water. Thus, by hunger, watching, and fatigue, he is constrained to submit to having his head covered by a hood or cowl, which covers his eyes. This troublesome employment continues often for three days and nights without ceasing. It rarely happens but at the end of this, his necessities and the privation of light make him lose all idea of liberty, and bring down his natural wildness. His master judges of his being tamed when he permits his head to be covered without resistance, and when uncovered he seizes the meat before him contentedly. The repetition of these lessons by degrees ensures success. His wants being the chief principle of his dependance, it is endeavoured to increase his appetite by giving him little balls of flannel, which he greedily swallows. Having thus excited the appetite, care is taken to satisfy it; and thus gratitude attaches the bird to the man who but just before had been his tormentor.

When the first lessons have succeeded, and the bird shows signs of docility, he is carried out upon some green, the head is uncovered, and, by flattering him with food at different times, he is taught to jump on the hand, and to continue there. When confirmed in this habit, it is then thought time to make him acquainted with the lure. This lure is only a thing stuffed like the bird the Falcon is designed to pursue, such as a heron, a pigeon, or a quail, and on this lure they always take care to give him his food. It is quite necessary that the bird should not only be acquainted with this, but fond

of it, and delicate in his food when shown it. The use of this lure is to flatter him back when he has flown in the air, which he sometimes fails to do; and it is always requisite to assist it by the voice and the signs of the master. When the familiarity and the docility of the bird are sufficiently confirmed on the green, he is then carried into the open fields, but still kept fast by a string which is about twenty yards long. He is then uncovered as before; and the falconer calling him, at some paces distance, till he comes at last to fly to it. The next day the lure is shown him at a greater distance, till he comes at last to fly to it at the utmost length of his string. He is then to be shown the game itself alive, but disabled or tame, which he is designed to pursue. After having seized this several times with his string, he is then left entirely at liberty, and carried into the field for the purposes of pursuing that which is wild. At that he flies with avidity; and when he has seized it or killed it, he is brought back by the voice and the lure.

By this method of instruction, a Hawk may be taught to fly at any game whatsoever; but falconers have chiefly confined their pursuit only to such animals as yield them profit by the capture, or pleasure in the pursuit. The hare, the partridge, and the quail, repay the trouble of taking them; but the most delightful sport is the Falcon's pursuit of the heron, the kite, or the woodlark. Instead of flying directly forward, as some other birds do, these, when they see themselves threatened by the approach of the Hawk, immediately take to the skies. They fly almost perpendicularly upward, while their ardent pursuer keeps pace with their flight, and tries to rise above them. Thus both diminish by degrees from the gazing spectator below, till they are quite

lost in the clouds ; but they are soon seen descending, struggling together, and using every effort on both sides ; the one of rapacious insult, the other of desperate defence. The unequal combat is soon at an end : the Falcon comes off victorious, and the other, killed or disabled, is made a prey either to the bird or the sportsman.

As for other birds, they are not so much pursued, as they generally fly straight forward, by which the sportsman loses sight of the chase, and, what is still worse, runs a chance of losing his Falcon also. The pursuit of a lark by a couple of merlins is considered, by him only who regards the sagacity of the chase, as one of the most delightful spectacles this exercise can afford. The amusement is, to see one of the merlins climbing to get the ascendant of the lark, while the other, lying low for the best advantage, waits the success of its companion's efforts ; thus, while one stoops to strike its prey, the other seizes it at its coming down.

The more ignoble race of birds make up by cunning and assiduity what these claim by force and celerity. The KITE, which may be distinguished



from all the rest of this tribe by his forked tail, and his slow floating motion, seems almost for ever upon the wing. In size he is bigger than the common

buzzard. He has large eyes, yellow legs and feet, and black talons. The head and back are of a pale ash hue, which is varied across the shafts of the feathers by longitudinal lines. His neck is reddish; the feathers covering the inside of the wings are red, with black spots in the centre; and the lesser rows of the wing feathers are party-coloured, black, red, and white. He lives only upon accidental carnage, as almost every bird in the air is able to make good his retreat against him. He may be, therefore, considered as an insidious thief, who only prowls about, and, when he finds a small bird wounded, or a young chicken strayed too far from the mother, instantly seizes the hour of calamity, and, like a famished glutton, is sure to show no mercy. His hunger, indeed, often urges him to acts of seeming desperation. We have seen one of them fly round and round for a while to mark a clutch of chickens, and then on a sudden dart like lightning upon the unsuspecting little animal, and carry it off, the hen in vain crying out, and the boys hooting and casting stones to scare it from its plunder. For this reason, of all birds the Kite is the good housewife's greatest tormentor and aversion.

Of all obscene birds, the Kite is the best known; but the BUZZARD among us is the most common.

THE COMMON BUZZARD,

WHICH is one of the most widely known kinds of Hawk in this country, is about twenty inches in length, and four feet and a half in breadth, when measured across the expansion of the wings. The lower parts of the body are pale, varied with brown; on the upper parts dusky bars of a darker hue mark

the wings and tail, the latter of which is grayish beneath, and tipped with dusky white. The legs are yellow, the claws black, and the bill lead-coloured, short, and hooked.

Though strong and active, the Buzzard is so cowardly that he will fly even from the sparrowhawk, and, when he is overtaken, will allow himself to be beaten, and cast to the ground, without making any resistance. His indolence is equal to his cowardice, as he will sit perched on the same bough during the



greatest part of the day. Such is his laziness that he seldom constructs a nest, but contents himself with repairing the old nest of a crow, and lining it with wool and other soft materials. Rats, mice, and often all sorts of carrion, are his articles of subsistence.

It is but fair, however, that justice should be done to the good qualities of the Buzzard. He may be tamed; and, in his domestic state, he manifests a very strong attachment to his owner. Buffon has given a highly amusing account of one which was reclaimed from the wild state by the Rector of St. Pierre de St. Belesme, and which displayed much of the

sagacity and affection of a dog. "After having shut it up about six weeks," says he, "I began to allow it a little liberty, taking the precaution, however, to tie both the pinions of its wings. In this condition it walked out in my garden, and returned when I called it to feed. After some time, when I judged that I could trust to its fidelity, I removed the ligatures; and fastened a small bell, an inch and a half in diameter, above its talon, and also attached to its breast a bit of copper, having my name engraved on it. I then gave it entire liberty, which it soon abused; for it took wing, and flew as far as the forest of Belesme. I gave it up for lost; but four hours afterwards, I saw it rush into my hall, pursued by four or five other Buzzards, which had constrained it to seek again its asylum. After this adventure, it preserved its fidelity to me, coming every night to sleep on my window." It would also sit by and caress him at dinner, and follow him when he was on horseback. This bird had a remarkable antipathy to wigs, and particularly to red caps, which it never failed to snatch from the wearers, and deposit in a very high tree, that served as a store-house for its plunder. It is still more to the credit of the Buzzard that it is a most kind and assiduous parent; and Ray affirms that, should the female chance to be killed, the male will take charge of the young ones, and rear them till they can provide for themselves. The eggs of this bird are whitish spotted with yellow.

THE MOOR BUZZARD.

THIS bird is about twenty-one inches in length, with a black bill, and yellow cere and eyes. The whole crown of the head is of a yellowish white, lightly

tinged with brown ; the throat is of a light rust colour ; the rest of the plumage is of a reddish brown, with pale edges ; the greater wing-coverts are tipped with white : the legs are yellow ; and claws black.



Rabbits, young wild ducks, and other waterfowl, are the prey of this bird ; which will likewise feed on fish, frogs, reptiles, and even insects. Its haunts are in hedges and bushes, near pools, marshes, and rivers that abound with fish. It builds its nest a little above the surface of the ground, or in hillocks covered with thick herbage : the female lays three or four eggs of a whitish colour, irregularly sprinkled with dusky spots. Though smaller, it is more active and bold than the Common Buzzard, and when pursued, it faces its antagonist, and makes a vigorous defence.

Birds of this kind differ much : in some the crown and back part of the head being yellow : while some are uniformly of a chocolate brown, with a tinge of rust colour.

THE GOSHAWK.

THIS bird is somewhat longer than the buzzard, but more slender and beautiful, and is one foot ten inches in length. Its bill is blue, tipped with black ; the

cere green; the eyes yellow: over each eye there is a whitish line: the head and all the upper parts of the body are of a deep brown colour; and each side of the neck is irregularly marked with white: the



breast and belly are white, with a number of wavy lines or bars of black; the tail is long, of an ash colour, and crossed with four or five dusky bars; the legs are yellow, and the claws black; the wings are much shorter than the tail.—It feeds on mice and small birds, and eagerly devours raw flesh; it plucks the birds very neatly, and tears them into pieces before it eats them, but swallows the pieces entire; and frequently disgorges the hair rolled up in small pellets.

The Goshawk is found in France and Germany; it is not very numerous in this country, but is more frequent in Scotland; where it breeds in lofty trees, and destroys large quantities of game. It is also common in North America, Russia, and Siberia. There is in Chinese Tartary a variety which is mottled with brown and yellow, and is used for sporting by the nobility.

THE SPARROWHAWK.



THIS bird is somewhat larger than a common pigeon, the male being about twelve inches in length, and the female fifteen. It has a short hooked blue bill, with yellow cere, slender reddish legs, and rather a long tail. The colour of the eye is a bright orange. The plumage on the wings and upper parts of the body is brown, spotted with a yellowish dun; the lower parts in some are whitish; in others of a russet colour.

The Sparrowhawk is very numerous in various parts of the world, from Russia to the Cape of Good Hope. The female builds in high rocks, lofty ruins, or hollow trees, but will sometimes condescend to take up with the old nest of a crow. Four or five is the number of eggs which she lays, and they are marked with reddish spots at the longer end. The Sparrowhawk is more easily trained and made docile than most of the rapacious tribes, and when domesticated it is susceptible of great attachment to its owner. In its wild state, it commits enormous havoc among the smaller race of birds; and it is an object of particular dislike to the farmer, as it sometimes makes destructive visits to the poultry yard, and is so daring that it is not to be intimidated from the *pursuit of its prey* even by the presence of mankind.

Of the buzzard, kite, and Falcon kind, above seventy different species, foreign and domestic, have been enumerated. Of all these the nature and properties are nearly the same, and the description we have given of the Gyr-Falcon will apply to most of the hawk species, only differing in size and other minuter particulars; and that of the buzzard to the kites in general, with the same allowance. Of the foreign birds of these species, some are crested, and others have plumage differing from ours. Of the SWALLOW-TAILED FALCON of America, the head, neck, and breast are white, the back and wings are black, glossed with purple and green. The tail is forked like that of a swallow, and like that bird it subsists almost entirely on the wing. It is rather smaller than the common kite.

THE SHRIKE,

OR BUTCHER-BIRD.



BEFORE we conclude that short history of rapacious birds that prey by day, it may not be improper to describe a tribe of smaller birds, that seem from their size rather to be classed with the harmless order of the sparrow kind; but that from their crooked beak, *courage, and appetite for slaughter*, certainly deserve

a place here. The lesser Butcher-bird is not much above the size of a lark; that of the smallest species is not so big as a sparrow; yet, diminutive as these little animals are, they make themselves formidable to birds of four times their dimensions.

The GREAT CINEREOUS SHRIKE, BUTCHER BIRD, or NINE-KILLER, is sometimes nearly a foot in length; its bill is black, an inch long, and hooked at the end; at the same time its legs and feet are slender, and its toes are formed rather like those of such as live chiefly upon insects and grain. Its plumage on the back is pale ash colour, the belly is white, and a black stripe runs from the beak parallel with its eyes. Its habits seem to correspond with its conformation, and it lives as well upon flesh as upon insects, and thus partakes in some measure of a double nature. Its appetite for flesh, however, is the most prevalent; and it never takes up with the former when it can obtain the latter. This bird, therefore, leads a life of continual combat and opposition. As from its size it does not much terrify the smaller birds of the forest, so it very frequently meets birds willing to try its strength, and it never declines the engagement. In Russia it is trained for catching small birds, like a falcon.

It is wonderful to see with what intrepidity this little creature goes to war with the pie, the crow, and the kestrel, all above four times larger than itself. It not only fights upon the defensive, but often comes to the attack, and always with advantage, particularly when the male and female unite to protect their young, and to drive away the more powerful birds of rapine. At that season, they do not wait the approach of their invader; it is sufficient that they see him preparing for the assault at a distance. *It is then that they sally forth with loud cries, wound*

him on every side, and drive him off with such fury, that he seldom ventures to return to the charge. In these disputes, they generally come off with the victory; though it sometimes happens that they fall to the ground with the bird they have so fiercely fixed upon, and the combat ends with the destruction of the assailant as well as of the defender.

For this reason, the most redoubtable birds of prey respect them; while the kite, the buzzard, and the crow, seem rather to fear than seek the engagement. Nothing in nature better displays the respect paid to the claims of courage, than to see this little bird, apparently so contemptible, fly in company with the lanner, the falcon, and all the tyrants of the air, without fearing their power, or avoiding their resentment.

As for small birds, they are his usual food. He seizes them by the throat, and strangles them in an instant. His name of Nine Killer he derives from the popular belief that he catches small birds to the number of nine, and impales them on a thorn, before he begins to tear them to pieces to satisfy his hunger. The fact is, that he pays no such attention to the regularity of number, but, being a bold bird, capable of killing much bigger birds than himself, he hangs his prey on a thorn, as a butcher does a beast on a hook, that he may dis sever it with more convenience to himself.

During summer, such of them as constantly reside here, for the smaller Red Butcher Bird migrates, remain among the mountainous parts of the country; but in winter they descend into plains and nearer human habitations. The larger kind make their nests on the highest trees, while the lesser build in bushes in the fields and hedge-rows. They both lay about six eggs, of a white colour, but encircled at

the larger end with a ring of brownish red. The nest on the outside is composed of white moss, interwoven with long grass; within, it is well lined with wool, and it is usually fixed among the forking branches of a tree. The female feeds her young with caterpillars and other insects while very young; but soon after accustoms them to flesh, which the male procures with surprising industry. Their nature also is very different from other birds of prey in their parental care: for, so far from driving out their young from the nest to shift for themselves, they keep them with care; and even when adult they do not forsake them, but the whole brood live in one family together. Each family lives apart, and is generally composed of the male, female, and five or six young ones; these all maintain peace and subordination among each other, and hunt in concert. It is easy to distinguish these birds at a distance, not only from their going in companies, but also from their manner of flying, which is always up and down, seldom direct or sideways.

Of these birds there are above forty different kinds, foreign and domestic; but the GREAT CINEREOUS BUTCHER BIRD is the least known among us. The Little Butcher Bird, or Red-backed Shrike, which is called a FLUSHER, is about the size of a lark, and has a large head. The back and upper side of his wings are of a rusty colour; the throat and breast white, with red spots, and the head and rump cinereous. The nest of this bird is formed of grass, and the female lays six eggs, nearly all white, except at the blunt end, which is encircled with brown or dark red marks.

The WOODCHAT resembles the former, except in the colour of the back, which is brown, and not red, *as in the other,*

The foreign birds of the Shrike genus are infinitely varied in plumage. The MALABAR SHRIKE is conspicuous for the singularity and beauty of its form. It is the size of the missel thrush. The general colour of its plumage is black, though on the back it is glossed with a fine shade of blue. Its head is crested, and the two outer feathers of the tail are three times the length of the others, and have for about six inches the shaft quite naked.

THE OWL.



ALL birds of the owl kind have one common mark, by which they are distinguished from others; their eyes, like those of tigers and cats, are formed for seeing better in the dusk, than in the broad glare of sunshine. The pupil, in fact, is capable of opening very wide, or shutting very close; and, by contracting it, the brighter light of the day, which would act too powerfully upon the sensibility of the eye, is excluded; while, by dilating the pupil, the animal takes in the more faint rays of the night, and thereby is enabled to spy its prey, and catch it with greater facility in the dark.

But though Owls are dazzled by too bright a day-

light, yet they do not see best in the darkest nights, as some have been apt to imagine.

The nights when the moon shines are the times of their most successful plunder; for when it is wholly dark, they are less qualified for seeing and pursuing their prey: except, therefore, by moonlight, they contract the hours of their chase; and if they come out at the approach of dusk in the evening, they return before it is totally dark, and then rise by twilight the next morning, to pursue their game, and to return, in like manner, before the broad daylight begins to dazzle them with its splendour.

Yet the faculty of seeing in the night, or of being entirely dazzled by day, is not alike in every species of these nocturnal birds. The common white or barn owl, for instance, sees with such exquisite acuteness in the dark, and though the barn has been shut at night, and the light thus totally excluded, that it perceives the smallest mouse that peeps from its hole: on the contrary, the brown horned owl is often seen to prowl along the hedges by day, like the sparrowhawk; and sometimes with good success. The note of the Owl is not unpleasant. "A friend," says Mr. White, "remarks that most of his Owls hoot in B flat; but that one went almost half a note below A.—A neighbour of mine, who is said to have a nice ear, remarks that the Owls about this village hoot in three different keys, in G flat, or F sharp, in B flat and A flat. He heard two hooting to each other, the one in A flat, and the other in B flat."

The birds of the Owl kind may be divided into two sorts; those that have horns, and those without. These horns are nothing more than two or three feathers that stand up on each side of the head over the ear, and give this animal a kind of horned ap-

pearance. Of the horned kind, is the GREAT EARED, or HORNED, or EAGLE OWL, which at first view appears as large as an eagle, though when he comes to be observed more closely, he will be found much less. His eyes are large and transparent, encircled with an orange coloured iris: his ears are large and deep: his plumage is of reddish brown, marked on the back with black and yellow spots, and yellow only upon the belly. To its offspring it is very affectionate, and if they are taken from the nest and confined, it will assiduously supply them with food. This, however, it accomplishes with such secrecy and sagacity, that it is almost impossible to detect it in the act. This bird has been seen in Scotland, and in Yorkshire, but is not common in England.

THE VIRGINIAN HORNED OWL



Is disseminated over nearly the whole of the American continent, from the north to the south. Above, the plumage is brown, marked with many transverse

stripes of black ; beneath, the features are of a dirty white, transversely striped with blackish brown.

Next to this we may class that which is called the **LONG-EARED OWL**. It is in length fourteen inches and a half. The eared tufts consist of six feathers. It is a reddish brown. The legs are feathered down to the toes. These birds are seldom at the trouble of making a nest for themselves, but generally take possession of an old magpie's or buzzard's nest. They lay four or five eggs. The young are white at first, but come to their colour in fifteen days. They are common in France and England.

The **SHORT-EARED OWL** is only fourteen inches long. It has one feather half an inch longer than the rest on each side of the head, which it can erect at pleasure. Its back is brown, and the belly a pale yellow, streaked with brown. The legs are feathered to the toes. It may be accounted a bird of passage, visiting us in October, and retiring in spring.

The **SCOPS** is still smaller than the last mentioned bird, which it resembles in most respects. It is, however, only seven or eight inches long, that is, not so large as a thrush ; its ears consist of two feathers, which are just elevated above the others. In France it appears as a bird of passage ; but it is dubious whether it ever visits England.

To these succeeds the tribe without horns. The **HOWLET**, or **ALUCO**, which is the largest of this kind, with dusky plumes, and black eyes ; the **TAWNY OWL**, of a smaller size, that is, about fourteen inches, with blue eyes, and plumage of an iron gray ; the **WHITE OWL**, about as large as the former ; the **BROWN OWL**, less than the former ; and, lastly, the **LITTLE BROWN OWL**, with yellowish coloured eyes, and an orange coloured bill.

The WHITE, or SCREECH OWL is common in Eng-

land, where it frequents churches, old houses, and uninhabited buildings. The singular cry which it emits during its flight, and which weak persons cannot hear without terror, is the source of its name. The plumage of this species has much elegance; all the superior parts of the body being of a fine pale yellow, mottled with white spots, while the under parts are entirely white, and a circle of soft white feathers surrounds each of the eyes. The legs are feathered to the claws. The sense of hearing in the Screech Owl is very acute. Since the time of Genghis Khan the Mongol and Kalmuc Tartars have held the White Owl sacred, in consequence of one of the species having settled on a bush under which the prince hid himself from his enemies after a defeat. The pursuers passed the bush, but did not examine it, as they imagined that a bird would not have perched where a man was concealed.

The BROWN OWL, which is also common in England, is rather more than a foot in length. The breast is of a pale ash colour, marked with dusky, longitudinal streaks, and the head, wings, and back are spotted with black. Round the eye is an ash coloured circle, spotted with brown. This is a very rapacious bird, and frequently commits great depredations in pigeon-houses. It breeds in ruined buildings and hollow trees, and, in defence of its young, will attack even mankind with great courage. Mice are among their favourite articles of food, and they skin them with as much dexterity as a cook maid skins a rabbit.

Of those Owls which may in France and England be termed foreign, near thirty different species have been enumerated. The SIBERIAN EARED OWL, is a most beautiful little bird, about the size of a house sparrow, *that is, scarcely* six inches in length. The

bill is brown, the eared feathers one inch in height. The whole body is ash coloured, and delicately powdered, and variegated with brown and white spots.

The SPECTACLED OWL is about three times as large as the preceding. The feathers on the head and neck are white and woolly; but on each side of the head there is a large patch of black brown, which surrounds the eyes. The upper parts of the body are reddish brown, with a bar of the same kind crossing the breast; the under parts of the body are white.

All this tribe of animals, however they may differ in their size and plumage, agree in their general characteristics of preying by night; their bodies are strong and muscular; their feet and claws made for tearing their prey; and their stomachs for digesting it. It must be remarked, however, that the digestion of all birds that live upon mice, lizards, or such like food, is not very perfect; for though they swallow them whole, yet they are always seen some time after to disgorge the skin and bones, rolled up in a pellet, as being indigestible.

As they are incapable of supporting the light of the day, or at least of then seeing and readily avoiding their danger, they keep all this time concealed in some obscure retreat, suited to their gloomy appetites, and there continue in solitude and silence. The cavern of a rock, the darkest part of a hollow tree, the battlements of a ruined unfrequented castle, some obscure hole in a farmer's outhouse, are the places where they are usually found: if they be seen out of these retreats in the daytime, they may be considered as having lost their way; as having by some accident been thrown into the midst of *their enemies*, and surrounded with danger.

In this distress they are obliged to take shelter in the first tree or hedge that offers, there to continue concealed all day, till the returning darkness once more supplies them with a better plan of the country. But it too often happens, that, with all their precaution to conceal themselves, they are spied out by the other birds of the place, and are sure to receive no mercy. The blackbird, the thrush, the jay, the bunting, and the redbreast, all come in file, and employ their little arts of insult and abuse. The smallest, the feeblest, and the most contemptible of this unfortunate bird's enemies are then the foremost to injure and torment him. They increase their cries and turbulence round him, flap him with their wings, and are ready to show their courage to be great, as they are sensible that their danger is but small. The unfortunate Owl, not knowing where to attack, or whither to fly, patiently sits and suffers all their insults. Astonished and dizzy, he only replies to their mockeries by awkward and ridiculous gestures, by turning his head, and rolling his eyes with an air of stupidity. It is enough that an Owl appears by day to set the whole grove into a kind of uproar. Either the aversion all the small birds have to this animal, or the consciousness of their own security, makes them pursue him without ceasing, while they encourage each other by their mutual cries to lend assistance in their laudable undertaking.

It sometimes happens, however, that the little birds pursue their insults with the same imprudent zeal with which the Owl himself had pursued his depredations. They hunt him the whole day until evening returns ; which restoring him his faculties of sight once more, he makes the foremost of his

pursuers pay dear for their former sport ; nor is man always an unconcerned spectator here. The bird-catchers have got an art of counterfeiting the cry of an Owl exactly ; and, having before limed the branches of a hedge, they sit unseen, and give the call. At this, all the little birds flock to the place where they expect to find their well known enemy ; but, instead of finding their stupid antagonist, they are stuck fast to the hedge themselves. This sport must be put in practice an hour before nightfall, in order to be successful ; for if it is put off till later, those birds which but a few minutes sooner came to provoke their enemy, will then fly from him with as much terror as they just before showed insolence.

It is not unpleasant to see one stupid bird made in some sort a decoy to deceive another. The great horned Owl is sometimes made use of for this purpose, to lure the kite, when the falconer desires to catch him for the purpose of training the falcon. Upon this occasion, they clap the tail of a fox to the great Owl, to render his figure extraordinary ; in which trim he sails slowly along, flying low, which is his usual manner. The kite, either curious to observe this odd kind of animal, or perhaps inquisitive to see whether it may not be proper for food, flies after, and comes nearer and nearer. In this manner he continues to hover, and sometimes to descend, till the falconer, setting a strong winged hawk against him, seizes him for the purpose of training his young ones at home.

The usual place where the great horned Owl breeds is in the cavern of a rock, the hollow of a tree, or the turret of some ruined castle. Its nest is near three feet in diameter, and composed of sticks, *bound together* by the fibrous roots of trees, and

lined with leaves on the inside. It lays about three eggs, which are larger than those of a hen, and of a colour somewhat resembling the bird itself. The lesser Owl of this kind never makes a nest for itself, but always takes up with the old nest of some other bird, which it has often been forced to abandon. It lays four or five eggs; and the young are all white at first, but change colour in about a fortnight. The other Owls in general build near the place where they chiefly prey; that which feeds upon birds, in some neighbouring grove; that which preys chiefly upon mice, near some farmer's yard, where the proprietor of the place takes care to give it perfect security. In fact, whatever mischief one species of Owl may do in the woods, the barn Owl makes a sufficient recompense for, by being equally active in destroying mice nearer home; so that a single Owl is said to be more serviceable than half a dozen cats in ridding the barn of its domestic vermin. "In the year 1580," says an old writer, "at Hallontide, an army of mice so overrun the marshes near Southminster, that they eat up the grass to the very roots. But at length a great number of strange painted Owls came and devoured all the mice. The like happened again in Essex about sixty years after."



CHAP. II.

*Of Birds of the Gallinaceous or Poultry Order...The BUSTARD...
The Little Bustard...Foreign Birds...The Houbara and the
Rhaad...The COCK...The TURKEY...The Horned Turkey...The
Guan, Yacou, and Morait Turkeys...The PINTADO...The GROUSE
...The Cock of the Wood...The Black and Red Grouse...The
Hazel Grouse...The Pintailed Grouse...The Ptarmigan...The
Ruffed Grouse...The PEACOCK...The PHEASANT...The Golden,
Argus, Superb, and Impeyan Pheasant...The Trumpeter...The
CURASSOW...The Cashewbird...The PARTRIDGE...The Francolin
...The Quail...The Crested Quail, &c... The Columbine Order
...The Tame PIGEON...The Ringdove...The Crown Pigeon...
The Turtle-dove...The Passenger Pigeon.*

The Gallinaceous (or Poultry) Order,

IT is obvious that this order of birds is the very opposite of that which we have so lately been describing. They are without the talons and the hooked bills of the rapacious kind; but there is another particular of still more importance in which they materially differ. In the rapacious order, which feed upon flesh, the digestion is carried on by means of a liquid in the stomach, which dissolves the food. In this, which feeds chiefly upon grain, the gizzard is the principal instrument which grinds and reduces the grain to a pulp. This fact is decisively proved by an easy experiment. If a grain of corn be enclosed in a tube or a globe of metal which is strong enough to resist the action of the gizzard, it will pass through the body of the fowl, the grain a little swelled, but completely unaltered for any of the purposes of digestion or nourishment.

THE BUSTARD



Is the largest land bird that is a native of Europe. It was once much more numerous than it is at present ; but the increased cultivation of the country, and the extreme delicacy of its flesh, have greatly thinned the species ; so that a time may come when it may be doubted whether ever so large a bird was bred among us. It is probable that long before this the Bustard would have been extirpated, but for its peculiar manner of feeding. It inhabits only the open and extensive plain, where its food lies in abundance, and where every invader may be seen at a distance.

The weight of this bird varies considerably, some have been found of not more than ten pounds, others have been found of twenty-seven, and even thirty. The female is not more than half the size of the male. The Bustard is distinguished from the ostrich, the touyou, the cassowary, and the dodo, by its wings, which, although disproportioned to the size

of its body, yet serve to elevate it in the air, and enable it to fly, though with some difficulty; they are generally about four feet from the tip of one to the other. The neck is a foot long, and the legs a foot and a half. The head and neck of the male are ash coloured; the back is barred transversely with black, and bright rust colour. The greater quill feathers are black; the belly white; and the tail, which consists of twenty feathers, is marked with broad black bars.

The Bustard (according to Plutarch) is found in Libya, in the environs of Alexandria, in Syria, in Greece, in Spain, in France, in the plains of Poitou and Champagne; they are now and then seen on the extensive downs of Salisbury Plain, in the heaths of Sussex and Cambridgeshire, the Dorsetshire uplands, and as far as East Lothian, in Scotland. In those extensive plains, where there are no woods to screen the sportsman, nor hedges to creep along, the Bustards enjoy an indolent security. Their food is composed of the berries that grow among the heath, and the large earthworms that appear in great quantities on the downs before sunrising in summer. They also eat green corn, the tops of turnips, and other vegetables; and have even been known to devour frogs, mice, and young birds. It is in vain that the fowler creeps forward to approach them, they have always sentinels placed at proper eminences, which are ever on the watch, and warn the flock of the smallest appearance of danger. All therefore that is left the sportsman, is the comfortless view of their distant security. He may wish, but they are in safety.

It sometimes happens that these birds, though they are seldom shot by the gun, are run down by

greyhounds. As they are voracious and greedy, they often sacrifice their safety to their appetite, and feed themselves so very fat, that they are unable to fly without great preparation. When the greyhound, therefore, comes within a certain distance, the Bustard runs off flapping its wings, and endeavouring to gather air enough under them to rise; in the mean time, the enemy approaches nearer, till it is too late for the bird even to think of obtaining safety by flight; for just at the rise there is always time lost, and of this the bird is sensible; it continues, therefore, on the foot until it is taken.

If we may credit *Ælian*, there is no contrivance so simple as not to be fit for the capture of this bird, since that author relates, that, in the kingdom of Pontus, the foxes make use of a curious stratagem in order to take them. The fox elevates his bushy tail, which he causes to imitate as much as possible the motion of the bird's neck; the Bustards, he adds, which mistake it for a bird of their species, approach it without apprehension, and become the prey of that crafty animal. All this, however, supposes infinite cunning in the fox, infinite stupidity in the bird, and perhaps infinite credulity in the writer.

As there are few places where they can at once find proper food and security, so they generally continue near their old haunts, seldom wandering above twenty or thirty miles from home. As their food is replete with moisture, it enables them to live upon these dry plains, where there are scarcely any springs of water, a long time without drinking. Besides this, nature has given the males an admirable magazine for their security against thirst. This is a pouch, the entrance of which lies immediately under the tongue, and capable of holding near seven

quarts of water. This is probably filled upon proper occasions, to supply the hen when sitting, or the young before they can fly. The Bustard also makes use of this reservoir to defend itself against birds of prey; which it effects by ejecting the water with such violence as often to arrest the progress of its enemy.

They form no nest, but only scrape a hole in the earth, and sometimes line it with a little long grass or straw. There they lay two eggs only, almost of the size of a goose egg, of a pale olive brown, marked with spots of a darker colour. They hatch for about thirty days, and the young ones run about as soon as they are out of the shell.

It is said that when the persecuted mother is apprehensive of the hunters, and is disturbed from her nest, she takes her eggs under her wings, and transports them to a place of safety. The fact is, however, that following the instinct of all the birds of this kind, they generally make their nest in the corn, where they are almost certain of remaining undisturbed.

The Bustard is not known in America. Besides the delicacy of their flesh, the quills are valuable, as they make excellent pens, but they are still more esteemed by anglers, who use them as floats; for, as they are spotted with black, the notion is, that these black spots appear as flies to the fish, which they rather allure than drive away by this appearance.

The **LITTLE BUSTARD** differs only from the preceding in being of a smaller size, being not larger than a pheasant, or about seventeen inches in length. This species is found in many parts of Europe. It is, however, by no means common in France, and

has only been met with three or four times in England.

There are six or seven species of foreign birds of this kind, two or three of which, particularly the HOUBARA and the RHAAD (both African birds), are crested, and different from ours by some varieties in their plumage.

THE COCK.



THIS bird, though perhaps the most common of all, is by no means sufficiently known, except to those who have made the productions of nature their peculiar study. So great indeed is the variety in this race of animals, that even the naturalist himself finds it difficult to point out its distinctive characters. If we take for the mark of the genus its four toes, what then becomes of the peculiar species which has five on each foot? If the erect and peculiar position of the tail be assumed, there is a species wholly destitute of this character. If we would say that the Cock is only feathered to the lower joint of the leg, there are some breeds which are feathered even to the toes, and that of Japan has feathers

even to the very nails. In fine, if we would class him among granivorous birds, we must allow some latitude even in this, since he devours greedily not only earthworms, but in many cases both fish and flesh.

Of all birds the Cock seems to be the oldest companion of mankind, to have been first reclaimed from the forest, and taken to supply the accidental failure of the luxuries or necessities of life. As he is thus longest under the care of man, so perhaps he exhibits the greatest number of varieties, there being scarcely two birds of this species that exactly resemble each other in plumage and form.

It is not well ascertained when the Cock was first made domestic in Europe; but it is generally agreed that we first had him in our western world from the kingdom of Persia. The Cock is found wild in the island of Tinian, in many others of the Indian ocean, and in the woods on the coasts of Malabar; his plumage is black and yellow, and his comb and wattles are yellow and purple. There is another peculiarity also in those of the Indian woods; their bones, which, when boiled with us, are white, as every body knows, in those are black as ebony. Whether this tincture proceeds from their food, as the bones are tintured red by feeding upon madder, we leave to the discussion of others: satisfied with the fact, let us decline speculation.

In their first propagation in Europe, there were distinctions then that now subsist no longer. The ancients esteemed those fowls whose plumage was reddish as invaluable; but as for the white, it was considered as utterly unfit for domestic purposes. These they regarded as subject to become a prey to rapacious birds; and less fruitful than the former.

No animal in the world has greater courage than the Cock, when opposed to one of his own species : and in every part of the world where refinement and polished manners have not entirely taken place, cock-fighting is a principal diversion. In China, India, the Philippine Islands, and all over the east, cock-fighting is the sport and amusement even of kings and princes. With us it is declining every day ; and it is to be hoped it will in time become only the pastime of the lowest vulgar. It is the opinion of many that we have a bolder and more valiant breed than is to be found elsewhere ; but the truth is, they have Cocks in China as bold, if not bolder than ours ; and, what would still be considered as valuable among cockers here, they have strength with less weight. Nor is it against his own species alone that the Cock displays courage. One, of less than a year old, has been known to dart on a sparrowhawk, throw him down, and detain him till a person came to secure the plunderer.

To his females the Cock is assiduously attentive. He keeps them always in his sight, prevents them from straggling, and defends them from aggression. Whatever strange Cock appears within his bounds is instantly attacked. His jealousy is as strong as his gallantry, and has been said to prompt him to take vengeance on the female. Dr. Percival relates an instance in which some partridges' eggs having been hatched under a Hen, the Cock, as soon as he saw the brood, fell furiously upon the unfortunate foster-mother, and killed her before any help could be afforded to her.

The egg of a common Hen weighs one ounce six drams. Upon breaking the shell, a fine membrane is found, which lines the shell ; next to this is the

external white, which is the shape of the egg, and then the internal white, which is rather rounder, and which encloses the yolk, which is quite round. Each of these parts is contained in a fine membrane.

With respect to the pretended Cock's eggs, which are said to be without a yolk, and which, if set under a Hen, credulity reports as likely to produce a serpent, they are no other than the first production of a Pullet too young for laying, or the last effort of an old Hen, which has been exhausted by her own fecundity.

The Hen seldom clutches a brood of Chickens above once a season, though instances have been known in which they have produced two. The number of eggs a domestic Hen will lay in the year is above two hundred, provided she be well fed, and supplied with water and liberty. It matters not much whether she be trodden by the Cock or not; she will continue to lay, although all the eggs of this kind can never by hatching be brought to produce a living animal.

As soon as an egg is laid, it begins to transpire, and loses, in a little time, some grains of its weight. If it continues exposed to the air, the inside hardens, and contracts a bad flavour; but, to prevent this effect, it is only necessary to cover the outside of the shell with a varnish, or with oily matter, which shields it from the air. It is obvious, however, that the varnish must be removed if the eggs are designed for hatching.

The Hen makes her nest without any care, if left to herself; a hole scratched in the ground, among a few bushes, is the only preparation she makes for this season of patient expectation. Nature, almost exhausted by its own fecundity, seems to inform her

of the proper time for hatching, which she herself testifies by a clucking note, and by discontinuing to lay. If left entirely to herself, the Hen would seldom lay above twenty eggs in the same nest, without attempting to hatch them. While she sits, she carefully turns her eggs, and even removes them to different situations; till at length, in about three weeks, the young brood begin to give signs of a desire to burst their confinement.

The formation of the embryo is curious. During the first day's incubation, and even when the egg has been under the Hen a few hours, the head of the Chicken may be seen gradually uniting itself to the spine of the back. On the second day the first processes of the vertebræ may be discerned like so many small globules disposed on each side of the spine. The first commencement of the wings and the umbilical vessels may also be distinguished by their dark colour. The neck and the breast also show themselves, and the head continues to increase in size. The third day the whole is more distinct and enlarged; and the heart, which is suspended at the opening of the breast, is observed to beat; veins and arteries may also be perceived about the brains, and the spinal marrow begins to extend itself through the spine. The eyes are considerably formed on the fourth day. The pupil and the crystalline and vitreous humours may be distinctly seen. The wings increase, the thighs appear, and the whole body begins in some degree to be covered with flesh. The fifth day the body is covered with a glutinous or unctuous flesh, the heart is retained within a very fine membrane, which also extends itself all over the breast. The sixth day the spinal marrow, in two divisions, continues to advance along the trunk; the liver,

which at first was whitish, becomes of a darker hue; both ventricles of the heart beat, and the body of the Chicken is covered with skin, in which may be already discerned the points of the feathers. The beak may be discovered on the seventh day, and the brain, the wings, the thighs, and even the feet, have acquired a perfect form. The lungs appear at the end of the ninth day; their colour is whitish. On the tenth the muscles of the wings begin to form, the feathers continue to shoot out. It is not till the eleventh day that the arteries, which before were separate, unite to the heart. The rest of the process consists only in an increase and more perfect development of the several parts, till they acquire sufficient vigour to break the shell.

The strongest and best Chickens generally are the first candidates for liberty: the weakest come behind, and some even die in the shell. When all are produced, the Hen leads them forth to provide for themselves. Her affection and her pride seem then to alter her very nature, and correct her imperfections. No longer voracious or cowardly, she abstains from all food that her young can swallow, and flies boldly at every creature that she thinks is likely to do them mischief.

Ten or twelve Chickens are the greatest number that a good Hen can rear and clutch at a time; but as this bears no proportion to the number of her eggs, schemes have been imagined to clutch all the eggs of an Hen, and thus turn her produce to the greatest advantage. The contrivance we mean is the artificial method of hatching Chickens in stoves, as is practised at Grand Cairo; or in a chymical laboratory, properly graduated, as has been effected by Mr. Reaumur. At Grand Cairo, they thus pro-

duce six or seven thousand Chickens at a time; where, as they are brought forth in their mild spring, which is warmer than our summer, the young ones thrive without clutching. But it is otherwise in our colder and unequal climate; the little animals may, without much difficulty, be hatched from the shell; but they almost all perish when excluded. Recent attempts have been made to apply steam to the purpose of hatching fowls. The Cock is a short-lived animal; but how long these birds live, if left to themselves, is not yet well ascertained by any historian. As they are kept only for profit, and in a few years become unfit for generation, there are few that, from mere motives of curiosity, will make the tedious experiment of maintaining a proper number till they die. Aldrovandus hints their age to be ten years¹; and it is probable that this may be its extent.

THE TURKEY.

IF the common cock is the most useful bird in our poultry yard, the Turkey is the most remarkable, as well for the beauty of the tail, as for the singular appearance of the head, and for those habits which are almost peculiar to itself. It is difficult to determine the natal place of any animal the species of which is generally diffused; but the weight of testimony inclines us to the opinion that the Turkey is a native of the New Continent, and that it was not brought into Europe till the discovery of that part of the world.

¹ The Editor has known game Cocks which were upwards of ten years old, though they had fought many battles, and consequently must have been greatly injured.

With us, when young, it is one of the tenderest of all birds: yet, in its wild state, it is found in great



plenty in the forests of Canada, which are covered with snow above three parts of the year. In their natural woods they are found much larger than in their state of domestic captivity. They are much more beautiful also, their feathers being a dark gray, bordered at the edges with a bright gold colour. These the savages of the country weave into cloaks to adorn their persons, and fashion into fans and umbrellas, but never once think of taking into keeping animals that the woods furnish them with in sufficient abundance. Savage man seems to find a delight in precarious possession. The hunting of the Turkey, therefore, makes one of his principal diversions; as its flesh contributes chiefly to the support of his family. When he has discovered the place of their retreat, which, in general, is near fields of nettles, or where there is plenty of any kind of grain, he takes his dog with him, which is trained to the sport, and he sends him into the midst of the flock. The Turkeys no sooner perceive their enemy than they set off running at full speed, and with

such swiftness, that they leave the dog far behind them: he follows, nevertheless, and, sensible they must soon be tired, as they cannot go full speed for any length of time, he, at last, forces them to take shelter in a tree, where they sit quite spent and fatigued, till the hunter comes up, and, with a long pole, knocks them down one after the other.

This manner of suffering themselves to be destroyed argues no great instinct in the animal; and indeed, in their captive state, they do not appear to be possessed of much. They seem a stupid, vain, querulous tribe, apt enough to quarrel among themselves, yet without any weapons to do each other an injury. Every body knows the strange antipathy the Turkey-cock has to red colour. But there is another method of increasing the animosity of these birds against each other, which is often practised by boys, when they have a mind for a battle. This is no more than to smear over the head of one of the Turkeys with dirt, and the rest run to attack it with all the speed of impotent animosity: nay, two of them thus disguised, will fight each other till they are almost suffocated with fatigue and anger.

But though so furious among themselves, they are weak and cowardly against other animals, though far less powerful than they. The cock often makes the Turkey keep at a distance; and they seldom venture to attack him but with united force, when they rather oppress him by their weight than annoy him by their arms. There is no animal, how contemptible soever, that will venture boldly to face the Turkey-cock, that he will not fly from. On the contrary, with the insolence of a bully, he pursues any thing that seems to fear him, particularly lap-dogs and children, to both which he seems to have a

peculiar aversion. Occasional instances of courage have, however, occurred, even in the Turkey. At New York, one of the species attacked and baffled a hawk, which was on the point of seizing a bantam-hen, one of the Turkey's companions.

The female seems of a milder, gentler disposition. She lays eighteen or twenty eggs. Her young must be carefully fed with curd, chopped with dock-leaves; but as they grow older, they become more hardy, and follow the mother to considerable distances in pursuit of insect food, which they prefer to any other. When once grown up, Turkeys are very hardy birds, and feed themselves at very little expense to the farmer. Those of Norfolk are said to be the largest of this kingdom, weighing from twenty to thirty pounds. There are places, however, in the East Indies, where they are known only in their domestic state, in which they grow to the weight of sixty pounds. They were introduced into England in the reign of Henry the Eighth.

Besides the wild Turkeys of America, there are a few foreign birds of this genus which deserve notice. The most singular of these is the **HORNED TURKEY** of Bengal. It is not quite so large as our Turkey, which it resembles in most respects, except that the loose flap which hangs down its throat is blue and not red. The breast and upper part of the back is full red, and the other parts of the plumage brown, marked with white spots. But its most remarkable characteristic consists in a fleshy, blue, callous substance, like horn, which springs behind each eye, and gives it the full effect of a horned animal.

The **GUAN TURKEY** is a native of Brazil. It is not larger than a common Turkey; the top of the head is furnished with long feathers, which the bird can

erect as a crest at pleasure. The colour of the plumage is in general a brownish black.

The YACOU TURKEY, which is a native of Cayenne, is also crested, as well as the MARAIL TURKEY, which is found in the woods of Guiana. The plumage of these birds is also more splendid than that of ours.

THE PINTADO, OR GUINEA-HEN,



Is a very remarkable bird, and in some measure unites the characteristics of the pheasant and the turkey. It has the fine delicate shape of the one, and the bare head of the other. To be more particular; it is about the size of the common hen, but as it is supported on longer legs, it looks much larger. It has a round back, with a tail turned downwards, like a partridge. The head is covered with a kind of casque; and the whole plumage is black or dark gray, speckled with white spots. It has wattles under the bill, which do not proceed from the lower chap, as in cocks, but from the upper, which gives it a very peculiar air; while its restless gait, and odd chuckling sound, distinguish it sufficiently from all other birds whatever.

It is well known all over Europe, and we find it in different countries called by different names, from the place whence they had it. We have given it the name of that part of Africa from whence probably it was first brought. Among the Romans they were in high repute for the table, and, being scarce, were sold at a great price.

In many parts of their native country they are seen in vast flocks together, feeding their young, and leading them in quest of food. All their habits are like those of the poultry kind, and they agree in every other respect, except that the male and female are so much alike, that they can hardly be distinguished asunder. The principal distinction is in the wattles; those of the cock being of a bluish cast, while those of the female incline to red. Their eggs, like their bodies, are speckled; in our climate they lay but five or six in a season; but they are far more prolific in their sultry regions at home.

There is a species of this bird with a very beautiful crest. There are also some other varieties which it would be tedious to describe.

THE GROUSE.

THIS genus of birds comprehends about seventeen species, foreign and domestic, all of which are distinguishable from other birds of the poultry order, by a naked scarlet skin above each eye. They have in other respects a great resemblance to our domestic fowl, but in reality are a very different race. They are by no means so numerous at present in any part of Europe, as we have reason to believe they once were. The piny forests and the barren heaths are

their natural retreats; and since cultivation has increased in these countries, they are only to be found on such extensive wastes as the moors of Westmoreland, and the almost inaccessible mountains in the most northern parts of Great Britain.



The **WOOD GROUSE**, or **COCK OF THE WOOD**, is the first of this genus in order and in consequence. It is about the size of a turkey, and frequently weighs near fourteen pounds; but the female is much smaller. The head and neck are ash colour, crossed with black lines; the body and wings chestnut brown, and the breast of a very glossy blackish green. The legs are strong, and covered with brown feathers. The plumage of the female differs from this description, it being red about the throat, and having the head, neck, and back, crossed with red and black bars; the belly barred with orange and black, with the tips of the feathers white, as are also the tips of the shoulders.

The Cock of the Wood, when in the forest, attaches himself principally to the oak and the pine tree; the cones of the latter serving for his food, and the thick boughs for a habitation. He feeds also upon ants'

eggs; which seem a high delicacy to all birds of the poultry kind: cranberries are likewise often found in his crop. The female is much less than her mate, and entirely unlike him in plumage, so that she might be mistaken for a bird of another species. She seldom lays more than six or seven eggs, which are white, and marked with yellow, of the size of a common hen's egg. She generally lays them in a dry place and mossy ground; and when she is obliged, during the time of incubation, to leave her eggs in quest of food, she covers them up so artfully with moss or dry leaves, that it is extremely difficult to discover them.

As soon as the young ones are hatched, they are seen running with extreme agility after the mother, though sometimes they are not entirely disengaged from the shell. They soon come to perfection; they are a hardy bird, their food lies every where before them, and it would seem that they should increase in great abundance. But this is not the case; their numbers are thinned by rapacious birds and beasts of every kind, and still more by their own salacious contests. At sun rise and setting, during this season, the male may be seen extremely active upon one of the largest branches of a pine tree; his tail raised and expanded like a fan, his wings drooping, his neck stretched out, and his head swoln and red. His cry upon this occasion is a kind of loud explosion, followed by a noise like the whetting of a scythe. While under this influence, they fight each other like game cocks; and are so inattentive to their own safety, that it often happens that two or three of them are killed at a shot. It is probable, that in these contests, the bird which comes off victorious takes possession of the female seraglio, as it is

certain they have no faithful attachments. This species was once not uncommon in the Highlands of Scotland. It is now extinct there, as well as in Ireland. The last Scotch specimen is said to have been killed about fifty years ago; and Ireland had previously ceased to possess the Cock of the Wood.

The BLACK GROUSE, or BLACK COCK, is much more common. It is found in many parts of Europe, and in most of the moors in the north of England, Wales, and Scotland. Its name almost furnishes its description, since the whole body is black, which, however, is iridescent, and in some positions of the light, it shows a beautiful purple; but it has another remarkable characteristic, which is, that its tail is forked. It is rather larger than a common fowl, and is in length from twenty-four to twenty-eight inches. At the breeding season their contests are so furious, that in Courland, Livonia, &c. it is a common method of taking them, to assemble them together, by imitating the crowing of a Black Cock, and by having a figure prepared to imitate that animal in all its motions. The Grouse, being collected in vast numbers from all parts, enter into a bloody contest; when the combatants are so intent upon each other's destruction, that they fall an easy prey to their pursuers, and may even be knocked down with a stick. There is a variety of this species with a plain tail. "When the snow begins to fall heavy (says the author of the British Naturalist) the Black Grouse betake themselves to the shelter of tall heath, juniper, or any other plant that will afford them cover while the violent wind with which falls of snow are usually accompanied in Alpine districts lasts; or they roost under the thick branches of the pines, in situations where they have access to these. Even upon the

pinces, the snow forms a close canopy, which lasts for a considerable time, while below there is a sufficiency of air for the breathing of the bird. In the shelter of the bushes they are obliged, like the white hares and other inhabitants of the mountains, to open breathing holes for themselves; and while they are pent up in their habitations of snow, the tops of the heather, or leaves of the bush, find them in food. When the surface becomes hard (which it does in no great length of time after the fall of snow is over, in consequence of the softening of the surface by the action of the sun, and the congealing of it again at night, till it is converted into a crust of smooth ice, and reflects off the greater part of the solar heat obliquely, as the rays then fall upon the surface), those breathing holes often betray their inmates to the ravages of predatory birds and quadrupeds. The mountain eagles and hawks then fly over the snowy surface, and beat it in the same manner for these holes, as they do for the birds themselves when there is no snow upon the ground; and the four-footed ravagers, that then find an easy passage along the hard surface, join in the spoil. Man sometimes takes a part in it, but much less frequently, because there are concealed holes and precipices under the snow, which are full of danger."

The RED GROUSE, or MOOR COCK, is also tolerably plentiful in those parts where the Black Grouse is to be found, and is almost peculiar to this island. It is rather smaller than the preceding species, being only fifteen inches and a half in length. The throat and back are reddish, with a black spot in each feather. The breast and belly are purplish brown, and the legs are covered with soft whitish feathers. So much do they delight in heath, that in the grassy

parts of moors they are seldom found, and as soon as the trees on a planted moor become of any size, the Red Grouse leaves the place. In the breeding season the buds of the heath are his principal food. The descent of this bird from the uplands to the borders of the cultivated fields is an unerring indication of a coming storm.

The HAZEL GROUSE is a smaller bird, and appears of the same species with the former. It is a native of Germany.

The PINTAILED GROUSE, so called from its narrow forked tail, is also of the same species with our red Grouse. It is the size of a partridge, and is found in France, Spain, Barbary, &c.

The PTARMIGAN, ROCK GROUSE, or WHITE PARTRIDGE, is in length about fifteen inches. The bill is black. The plumage of the Ptarmigan in summer is a mottled gray and white, so that, when it is moving, it is not easily distinguishable from the stones among which it is found. The quills of the wings, and the two middle feathers of the tail, are white; but the rest of the tail feathers are black, with white tips. In winter, the whole of the bird is white, except a feather or two on the breast. The change begins in September, and is completed in October. It is found in all the northern parts of Europe, and in the Highlands of Scotland, Orkneys, &c.; and resides in the loftiest parts of the mountains, where it hides itself in crevices, and often in holes in the snow. Their legs are thickly feathered, as a protection from the cold.

The foreign birds of this genus have all the same manners as the preceding, and only differ occasionally in the plumage. There is a species in North America which is called the RUFFED GROUSE, and

which is distinguished by a large ruff on the hind part of the neck, that can be raised or depressed at pleasure; it has also the head adorned with a crest. This bird has a curious practice, which is called *thumping*, by which it makes a noise that may be heard nearly half a mile. The sound, which it makes morning and evening in the spring and fall, is said to be produced by beating its wings against its sides.

THE PEACOCK,



By the common people of Italy, is said to have the plumage of an angel, the voice of a devil, and the guts of a thief. Our first Peacocks were brought from the East Indies; and we are assured that they are still found in vast flocks, in a wild state, in the Islands of Java and Ceylon.

To describe, in adequate terms, the dazzling beauties of this elegant bird, would be a task of no small difficulty. Its head is adorned with a tuft,

consisting of twenty-four feathers, whose slender shafts are furnished with webs only at the ends, painted with the most exquisite green, mixed with gold: the head, throat, neck, and breast are of a deep blue, glossed with green and gold; the greater coverts and bastard wings are of a reddish brown, as are also the quills, some of which are variegated with black and green; the belly and vent are black, with a greenish hue: but the distinguishing character of this singular bird is its train, which rises just above the tail, and, when erected, forms a fan of the most resplendent hues: the two middle feathers are sometimes four feet and a half long, the others gradually diminishing on each side: the shafts, white, and furnished from their origin nearly to the end with parted filaments of varying colours ending in a flat vane, which is decorated with what is called the eye. The real tail consists of short, stiff, brown feathers, which serve as a support to the train. When pleased or delighted, and in sight of his females, the Peacock erects his train, and displays all the majesty of his beauty: all his movements are full of dignity; his head and neck bend nobly back; his pace is slow and solemn, and he frequently turns slowly and gracefully round, as if to catch the sunbeams in every direction, and produce new colours of inconceivable richness and beauty, accompanied at the same time with a hollow murmuring voice expressive of desire. The cry of the Peacock, at other times, is often repeated and very disagreeable. The plumes are shed every year, and, while moulting them, the bird, as if humiliated, retires from view.

The Peacock has in some countries been esteemed as an article of luxury; but whatever there may be

of delicacy in the flesh of a young Peacock, it is certain an old one is very indifferent eating. Its fame for delicacy, however, did not continue very long; for we find in the time of Francis the First, that it was a custom to serve up Peacocks to the tables of the great, with an intention not to be eaten, but only to be seen. Their manner was to strip off the skin; and then preparing the body with the warmest spices, they covered it up again in its former skin, with all its plumage in full display, and no way injured by the preparation. The bird, thus prepared, was often preserved for many years without corrupting; and it is asserted of the Peacock's flesh, that it keeps longer unputrefied than that of any other animal. To give a higher zest to these entertainments, on weddings particularly, they filled the bird's beak and throat with cotton and camphire, which they set on fire to amuse and delight the company. Peacocks were highly esteemed by the Romans, and the Bible mentions them among Solomon's importations from the East. In the days of chivalry also they were in such great repute as to be the subject of a knightly oath.

Like other birds of the poultry kind, the Peacock feeds upon corn; but its chief predilection is for barley. There is, however, scarcely any food that it will not at times covet and pursue. In the indulgence of these capricious pursuits, walls cannot easily confine it; it strips the tops of houses of their tiles or thatch, it lays waste the labours of the gardener, roots up his choicest seeds, and nips his favourite flowers in the bud. Thus its beauty ill recompenses for the mischief it occasions; and many of the more homely looking fowls are very deservedly preferred before it.

The Peahen seldom lays above five or six eggs in this climate before she sits. Aristotle describes her as laying twelve; and it is probable, in her native climate, she may be thus prolific: for it is certain that, in the forests where they breed naturally, they are numerous beyond expression. The bird lives about twenty years; and not till its third year has it that beautiful variegated plumage that adorns its tail.

THE PHEASANT.



THE name of this bird sufficiently indicates its origin. The *Pheasant* is the bird of *Phasis*, a river of Colchis, in Asia Minor, whence they were first introduced into Europe.

Next to the peacock they are the most beautiful of birds, as well for the vivid colour of their plumes as for their happy mixtures and varieties. It is far beyond the power of the pencil to draw any thing so glossy, so bright, or points so finely blending into each other. We are told that when Cræsus, king of Lydia, was seated on his throne, adorned with royal magnificence, and all the barbarous pomp

of eastern splendour, he asked Solon if he had ever beheld any thing so fine? The Greek philosopher, no way moved by the objects before him, or taking a pride in his native simplicity, replied, that after having seen the beautiful plumage of the Pheasant, he could be astonished at no other finery.

In fact, nothing can satisfy the eye with a greater variety and richness of ornament than this beautiful creature. The iris of the eyes is yellow; and the eyes themselves are surrounded with a scarlet colour, sprinkled with small specks of black. On the fore part of the head there are blackish feathers mixed with a shining purple. The top of the head and the upper part of the neck are tinged with a darkish green that shines like silk. In some, the top of the head is of a shining blue, and the head itself, as well as the upper part of the neck, appears sometimes blue and sometimes green, as it is differently placed to the eye of the spectator. The feathers of the breast, the shoulders, the middle of the back, and the sides under the wings, have a blackish ground, with edges tinged of an exquisite colour, which appears sometimes black and sometimes purple, according to the different lights it is placed in; under the purple there is a transverse streak of gold colour. The tail, from the middle feathers to the root, is about eighteen inches long; the legs, the feet, and the toes, are of the colour of horn. There are black spurs on the legs, shorter than those of a cock; there is a membrane that connects two of the toes together; and the male is much more beautiful than the female.

The wings of the Pheasant are short, and not calculated for a protracted flight. On this account, the Pheasants on the island called Isola Madre, in

the Lago Maggiore, in Italy, as they cannot fly across the lake, are imprisoned. Those which attempt to cross are almost always drowned.

This bird, though so beautiful to the eye, is not less delicate when served up to the table. Its flesh is considered as the greatest dainty; and when the old physicians spoke of the wholesomeness of any viands, they made their comparison with the flesh of the Pheasant. In the woods the hen Pheasant lays from eighteen to twenty eggs in a season; but in a domestic state she seldom lays above ten. Its fecundity when wild is sufficient to stock the forest; its beautiful plumage adorns it; and its flesh retains a higher flavour from its unlimited freedom.

The Pheasant, when full grown, seems to feed indifferently upon every thing that offers. It is said by a French writer, that one of the king's sportsmen shooting at a parcel of crows that were gathered round a dead carcass, to his great surprise, upon coming up, found that he had killed as many Pheasants as crows. It is even asserted by some, that such is the carnivorous disposition of this bird, that when several of them are put together in the same yard, if one of them happens to fall sick, or seems to be pining, all the rest will fall upon, kill, and devour it.

There is a **BASTARD PHEASANT** which is of a mixed breed between the Pheasant and the cock. The back is reddish, mottled with brown and white; the lower parts ash-coloured, spotted with brown. There is also a variety supposed to be produced between the turkey and the Pheasant, and on that account called the **TURKEY PHEASANT**. It is, like the former, of a mingled colour.

There are about eight or ten foreign birds known of this *genus*. Among these the **PAINTED** or **GOLDEN**

PHEASANT OF CHINA is most conspicuous for its beauty. It is less than the common Pheasant, not being more than two feet nine inches long. The general colour of the plumage is crimson; on the head is a beautiful yellow crest, the feathers of which appear like silk. The back and rump are yellow; the scapulars are blue, the quills brown marked with yellow; the tail is twenty-three inches in length, and the colour is chestnut, mottled with black. The hen is materially different, the general colour of her plumage being brown. It appears a tolerably hardy bird, suffering more from the dampness and variability of the atmosphere than from cold, and has been known to propagate with our common Pheasant.

The ARGUS PHEASANT is a magnificent bird. It receives its name from the quills being marked with eyes resembling those in the peacock's train. The top and hind part of the head and neck is a changeable blue; the back dusky, marked with reddish brown, the throat and breast a dull orange. It is the size of a cock turkey, and the two middle feathers of the tail are three feet in length. This bird, as well as the former, and the SUPERB PHEASANT, the predominant colour of which is a beautiful green, is a native of China. In a strong light it appears dazzled and stupified, but recovers its animation in the dark.

The IMPEYAN PHEASANT, from Indostan, is larger than a common fowl. On the head is an erect crest of eighteen feathers, the longest three inches and a half in length. The feathers of the head and throat are green bronze, of the middle of the neck purple, with a copper gloss. The back and wings are purple, the belly is black, with a green gloss; the tail is a brown cinnamon colour.

There is another beautiful bird which some natu-

ralists class with the pheasant, while others make it of a different genus, that is, the TRUMPETER. It has the breast of a fine glossy gilded green, though the general colour of the plumage is black. In other birds of this kind the colour varies a little, as the wings have a mixture of white, &c. The size is that of a large fowl.

This singular bird inhabits South America, and derives its name from the remarkable sound it produces, which some imagine to proceed from the anus, or at least from the belly. This equivocal noise, which somewhat resembles the moan of a pigeon, is, says Mr. Bingley, "at times preceded by a savage cry, interrupted by a sound approaching that of *scherk, scherk*. In this way the bird utters five, six, or seven times, with precipitation, a hollow voice emitted from within its body, nearly as if one pronounced *tou, tou, tou, tou, tou, tou*, with the mouth shut, resting upon the last *tou*, . . . a very long time, and terminating by sinking gradually with the same note." This peculiar sound it may be induced to make, by being enticed with a bit of bread, at the same time that the person offering it imitates the natural note of the bird.

This bird is easily tamed, and becomes greatly attached to its benefactor. When bred in the house, it loads its master with caresses, and even follows him through the streets like a dog. It has, however, far more than a dog, the Turkish propensity of bearing "no rival near its throne;" for it will fight with dogs, cats, and even men, whom it suspects of sharing the kindness of the person to whom it is attached. The Trumpeter, it is said, may be trained to attend a flock of sheep.

THE CURASSOW

Is a bird which bears much resemblance to the pheasant, though naturalists have agreed in considering it as a distinct genus. It comprehends four or five species, with some varieties, but they are all of them foreign birds, and belong only to the warm climates of America. They are mostly about the size of a small turkey, and are generally distinguished by a crest of feathers, which curl at the ends. This crest can be raised or depressed at will. The plumage of the Crested Curassow is of a deep black, with a slight gloss of green upon the head, crest, neck, back, wings, and upper part of the tail; and dull white beneath, and on the lower tail coverts.

There is another species which is called the CASHEW CURASSOW, or CASHEW BIRD, from a large blue gibbosity, resembling a cashew nut, and as large as a pear, which is situated at the base of the forehead. The whole bird is of a shining bluish colour, reflecting purple glosses; except the lower part of the belly, the covert feathers, under the tail, and the tips of the tail feathers, which are white.

In Mexico, Guiana, and Brazil, these birds are very numerous, both in a wild and a tame state. The flesh is excellent.

THE PARTRIDGE.

OF Partridges there are more than twenty species, foreign and domestic, but they may all be arranged under two divisions, the gray and the red. The red Partridge is the largest of the two, and often perches

upon trees ; the gray, which is the common Partridge in England, is most prolific, and always keeps on the ground.

This bird is about thirteen inches in length. The general colour of its plumage is brown and ash,



elegantly mixed with black ; each feather is streaked down the middle with buff colour ; the sides of the head are tawny ; the eyes are hazel, and under each eye there is a small saffron-coloured spot, which has a granulated appearance, and between the eye and the ear is a naked skin of a bright scarlet, which is not very conspicuous but in old birds ; on the breast there is a crescent of a deep chestnut colour ; the tail is short ; the legs are of a greenish white, and are furnished with a small knob behind. The bill is of a light brown. The female has no crescent on the breast, and her colours in general are not so distinct and bright as those of the male. There are generally from ten to fifteen in a covey ; and, if unmolested, they live from fifteen to seventeen years.

The Partridge seems to be a bird well known all over the world, as it is found in every country and in every climate ; as well in frozen regions about the pole, as the torrid tracts under the equator. It even seems to adapt itself to the nature of the climate

where it resides. In Greenland, the Partridge, which is brown in summer, as soon as the icy winter sets in begins to take a covering suited to the season; it is then clothed with a warm down beneath; and its outward plumage assumes the colour of the snows amongst which it seeks its food. The manners of the Partridge in most circumstances resemble all those of poultry in general; but their cunning and instinct seem superior to those of the larger kinds. Perhaps, as they live in the very neighbourhood of their enemies, they have more frequent occasion to put their little arts in practice, and learn, by habit, the means of evasion or safety. The affection of the female for her young is peculiarly strong and lively; she is greatly assisted in the care of rearing them by her mate; they lead them out in common, call them together, point out to them their proper food, and assist them in finding it by scratching the ground with their feet. They frequently sit close by each other, covering their young with their wings, like the hen: in this situation they are not easily flushed; but when, at length, they are compelled to move, the male employs many interesting stratagems, such as fluttering along the ground, hanging his wings, and feigning to be wounded, in order to attract the pursuit of the enemy, and afford to the female an opportunity to escape with her infant brood. Partridges, though tamed when young, will almost invariably return to the wild state.

The FRANCOLIN is one of the most beautiful species of Partridge. It is sometimes found in the South of Spain, but is very common in Barbary.

There is also a BARE-NECKED PARTRIDGE, and a species with a hackle like that of a cock.

THE QUAIL



Is a bird much smaller than any of the former, being not above half the size of a partridge. Its flesh is a great delicacy. The feathers of the head are black, edged with rusty brown; the breast is of a pale yellowish red, spotted with black; the feathers on the back are marked with lines of pale yellow, and the legs are of a pale hue.

The Quail is by all known to be a bird of passage; and yet, if we consider its heavy manner of flying, and its dearth of plumage, with respect to its corpulence, we shall be surprised how a bird so apparently ill qualified for migration should take such extensive journeys. Nothing, however, is more certain. "When we sailed from Rhodes to Alexandria," says Bello-nius, "about autumn, many Quails, flying from the north to the south, were taken in our ship; and sailing at spring time the contrary way, from the south to the north, I observed them on their return, when many of them were taken in the same manner." This account is confirmed by many others; who aver, that they choose a north wind for these adventures; the south being very unfavourable, as it retards their flight, by moistening their plumage. They then fly two by two; continuing, when their way lies over land, to go faster by night than by day; and to

fly very high, to avoid being surprised, or set upon by birds of prey. On the western coasts of the kingdom of Naples, and on the shores of Provence, such prodigious flights have appeared, that a hundred thousand have been taken in a day within the space of four or five miles. It is now, however, asserted by some, that the Quail only migrates from one province of a country to another. For instance, that in England they fly from the inland counties to those bordering on the sea, and continue there all the winter.

These birds are much less prolific than the partridge; seldom laying more than six or seven whitish eggs, marked with ragged, rust-coloured spots. Quail-fighting was a favourite amusement among the Athenians; they abstained from the flesh of this bird, deeming it unwholesome, as supposing that it fed upon the white hellebore; but they reared great numbers of them, for the pleasure of seeing them fight; and staked sums of money, as we do with cocks, upon the success of the combat. The same practice is at this day carried on in China and in some parts of Italy.

In South America there are crested Quails; and in different parts of the world their plumage greatly varies. Ten or twelve different species have been enumerated; but the common Quail only is known in France and England.

THE DOVES, OR PIGEONS,

ARE by some naturalists made a distinct order of birds, and indeed it must be confessed that the Pigeon has little affinity with any of the preceding, except its domestic habits, and its utility to man.

As the order, however, consists of too small a number of species, and those too well known to require a distinct chapter, we shall add whatever occurs upon the subject to the present section of our ornithology.

THE TAME PIGEON,



AND all its beautiful varieties, is said to derive its origin from the Stockdove, the English name, implying its being the stock or stem whence the other domestic kinds have been propagated. This bird, in its natural state, is of a deep bluish ash colour; the breast dashed with a fine changeable green and purple; its wings marked with two black bars; and the tail barred near the end with black. These are the colours of the Pigeon in a state of nature; and from these simple tints has man by art propagated a variety that words cannot describe, nor even fancy suggest. However, nature still perseveres in her great outline; and though the form, colour, and even the fecundity of these birds may be altered by art, yet their natural manners and inclinations continue still the same. The Stockdove usually builds in holes of rocks, or in excavated trees. Its murmuring note at morning and dusk is highly pleasing.

The Dovehouse Pigeon, as is well known, breeds every month; it lays two white eggs, which most usually produce young ones of different sexes. From three or four o'clock in the evening till nine the next day, the female sits on the eggs; she is then relieved by the male, who takes his place from ten till three, while his mate is feeding abroad. In this manner they sit alternately till the young are excluded, which is from eighteen to twenty days, according to the warmth of the season. If, during this term, the female delays to return at the expected hour, the male follows and drives her to the nest; and should he in his turn be dilatory, she retaliates with equal severity.

The hen Pigeon is, however, so constant to her eggs, that one, whose legs were frozen and dropped off, continued to sit, notwithstanding the pain which she endured with the loss of her limbs, till her young were hatched. Her legs were frozen by the nest being too near the entrance of the dovecote, and consequently exposed to the cold air.

The young ones when hatched require no food for the three first days, only wanting to be kept warm, which is an employment the female takes entirely upon herself. During this period she never stirs out, except for a few minutes to take a little food. From this they are fed for eight or ten days, with corn or grain of different kinds, which the old ones gather in the fields, and keep treasured up in their crops, whence they throw it up again into the mouths of their young ones, who very greedily demand it. So great is the produce of this bird in its domestic state, that near fifteen thousand may, in the space of four years, be produced from a single pair.

Most birds drink by sipping at intervals; the

Pigeon takes a long continued draught, like a quadruped.

Those Pigeons which are called Carriers, and are used to convey letters, are easily distinguished from all others by their eyes, which are compassed about with a broad circle of naked white skin, and by being of a dark blue or blackish colour. It is from their attachment to their native place, and particularly where they have brought up their young, that these birds are employed in several countries as the most expeditious carriers. They are first brought from the place where they were bred, and whither it is intended to send them back with information. The letter is tied under the bird's wing, and, after feeding it well, lest it should stop by the way to eat, it is let loose, to return. The little animal no sooner finds itself at liberty, than its passion for its native spot directs all its motions. It is seen, upon these occasions, flying directly into the clouds to an amazing height; and then, with the greatest certainty and exactness, directing itself by some surprising instinct towards home, which lies sometimes at many miles distance. It is said that, in the space of an hour and a half, they sometimes perform a journey of forty miles.

The varieties of the tame Pigeon are so numerous, that it would be a vain attempt to mention them all: so much is the figure and the colour of this bird under human control, that pigeon-fanciers, by coupling a male and female of different sorts, can breed them, as they express it, to a feather. Hence we have the various names of Croppers, Carriers, Jacobines, Powters, Runts, Tumblers, Turbits, &c. There are many species of the wild Pigeon differing from the Stockdove. The RINGDOVE is of the number;

a good deal larger than the former, and building its nest with a few dry sticks in the boughs of trees. This seems a bird much fonder of its native freedom than the former: and attempts have been frequently made to render it domestic: but they have hitherto proved fruitless: for though their eggs have been hatched by the tame pigeon in a dove-house, yet, as soon as they could fly, they always betook themselves to the woods where they were first produced. This is the largest Pigeon of our island, it being eighteen inches in length. It derives its name from a beautiful white circle round the neck.

There are a variety of foreign birds, which belong to the Pigeon species, but few of them are remarkable enough to require insertion in this abridgment. Among those which we shall notice is that which is denominated by Edwards the *LARGE CROWNED PIGEON of the East Indies*. Though as large as a turkey, this bird evidently belongs to the Pigeon species. It has the beak, the head, the legs, the form, the voice, and manners of this species. It is a native of the Isle of Banda. There appears no distinction between the males and the females, and the latter do not lay in these cold climates.

The *LESSER CROWNED PIGEON* is also a native of India. It is the size of a common pigeon. The head and neck of this bird are black; the back, rump, and tail a deep green; the breast and belly, violet, and the crest a gilded red.

THE TURTLE-DOVE

Is a smaller, but a much shyer bird than any of the former. It may easily be distinguished from the rest by the iris of the eye, which is of a fine yellow,

and by a beautiful crimson circle that encompasses the eyelids. The Turtle-dove is a bird of passage,



and few or none remain in our northern climates in winter. It arrives late in the spring, and departs about the latter end of August. They fly in flocks when they come to breed here in summer, and delight in open, mountainous, sandy countries. They build their nests in the midst of woods; but may yet be tamed, and even brought to propagate in dove-houses like the tame pigeon, and several varieties are produced in this artificial existence. They will even pair with pigeons, and thus produce a mixed one. The note of this bird is singularly tender and plaintive; in addressing his mate, the male makes use of a variety of winning attitudes, cooing at the same time in the most gentle and soothing accents. The fidelity of these birds has furnished poets and sentimental writers with the most beautiful allusions; and it is generally asserted, that if a pair be put into a cage, and one happen to die, the other will not survive it.

Among the foreign birds of this species is the **GROUND TURTLE**, or **SMALL TURTLE-DOVE**, of St. Domingo. It is not above the size of the common crested lark, or a little better than six inches long. The upper parts of the body are ash coloured, the lower parts reddish, spotted with brown. It is ex-

cellent eating, and on this account, and for its size, it has acquired the name of Ortolan, being nearly about the same weight as the European Ortolan.

Of the foreign varieties of this tribe of birds, one of the most remarkable is the PASSENGER, or WILD PIGEON of America, which is about the size of the common pigeon. The head, throat, and upper parts of the body are ash coloured; the sides of the neck are of a glossy variable purple; the fore part of the neck and breast are vinaceous; the under parts of a similar colour, but paler; and there is a crimson mark round the eyes. These birds visit the different parts of North America in such immense flocks that we may justly apply to them Milton's expression of "numbers numberless." Their habits and migrations, and the manner in which they are pursued by man and beast, are thus described by Mr. Audubon. "The most important facts connected with the habits of these birds relate to their extraordinary associations and migrations. No other species known to naturalists is more calculated to attract the attention of either the citizen or the stranger, as he has opportunities of viewing both of these characteristic habits while they are passing from north to south, east and west, and, *vice versâ*, over and across the whole extent of the United States of America.

"These remarkable migrations are owing entirely to the dire necessity of providing food, and not merely to escape the severity of a northern latitude, or seek a southern one for the purpose of breeding. They consequently do not take place at any fixed period or season of the year. Indeed, it happens sometimes that a continuance of a sufficient supply of food in one district will keep those birds absent from another for years.

"*I know at least to a certainty, that in Kentucky*

they remained for several years constantly, and were nowhere else to be found. They all disappeared one season suddenly when the mast was exhausted, and thus did not return for a long period. The same facts have been observed in other states.

“ Their great power of flight enables them, when in need, to survey and pass over an astonishing extent of country in a very short time. This is proved by facts known to the greater number of observers in America. Pigeons, for example, have been killed in the neighbourhood of New York, with their crops still filled with rice, collected by them in the fields of Georgia and Carolina, the nearest point at which this supply could possibly have been obtained ; and, as it is well ascertained, that owing to their great power of digestion, they will decompose food entirely in twelve hours, they must have travelled between three hundred and four hundred miles in six hours, making their speed at an average about one mile in a minute, and this would enable one of these birds, if so inclined, to visit the European continent, as swallows are undoubtedly able to do, in a couple of days.

“ This great power of flight is seconded by as great a power of vision, which enables them, as they travel at that swift rate, to view objects below, to discover their food with facility, and thus put an immediate end to their journey. This I also have proved to be the case, by having observed the Pigeons, when passing over a destitute part of the country, keep high in air, and in such an extensive front, as to enable them to survey hundreds of acres at once. But if, on the contrary, the land is richly covered with food, or the trees with mast, they will fly low,

in order to discover the portions most plentifully supplied, and upon these they alight progressively.

“The form of the bodies of these swift travellers is an elongated oval, steered by a long well plumed tail, furnished with extremely well set and very muscular wings for the size of the individual. If a single bird is seen gliding through the woods and close by, it passes apparently like a thought; and on trying to see him again, the eye searches in vain—the bird is gone!

“Their multitudes in our woods are astonishing; and, indeed, after having viewed them so often, and under so many circumstances, for years, and, I may add, in many different climates, I even now feel inclined to pause, and assure myself afresh that what I am going to relate is fact. That I have seen it is most certain; and I have seen it all in the company of hundreds of other persons looking on, like myself, amazed, and wondering if what we saw was really true.

“In the autumn of 1813, I left my house at Henderson, on the banks of the Ohio, on my way to Louisville. Having met the Pigeons flying from north-east to south-west, in the barrens or natural wastes, a few miles beyond Hardensburgh, in greater apparent numbers than I thought I had ever seen them before, I felt an inclination to enumerate the flocks that would pass within the reach of my eye in one hour. I dismounted, and, seating myself on a tolerable eminence, took my pencil to mark down what I saw going by and over me, and made a dot for every flock which passed.

“Finding, however, that this was next to impossible, and feeling unable to record the flocks, as they

multiplied constantly, I rose, and, counting the dots, then put down, discovered that one hundred and sixty-three had been made in twenty-one minutes. I travelled on, and still met more the farther I went. The air was literally filled with Pigeons; the light of noonday became dim, as during an eclipse; the pigeon's dung fell in spots, not unlike melting flakes of snow; and the continued buzz of their wings over me had a tendency to incline my senses to repose.

"Whilst waiting for my dinner at Young's inn, at the confluence of Salt river with the Ohio, I saw, at my leisure, immense legions still going by, with a front reaching far beyond the Ohio on the west, and the beech-wood forests directly on the east of me. Yet not a single bird would alight; for not a nut or acorn was that year to be seen in the neighbourhood. They consequently flew so high, that different trials to reach them with a capital rifle proved ineffectual, and not even the report disturbed them in the least. But I cannot describe how beautiful their aerial evolutions were, if a black hawk appeared in their rear. At once, like a torrent, and with a thunderlike noise, they formed themselves into almost a solid compact mass, pressing each on each towards the centre; and when in such solid bodies, they zigzagged to escape the murderous falcon, now down close over the earth sweeping with inconceivable velocity, then ascending perpendicularly, like a vast monument; and, when high, were seen wheeling and twisting within their continued lines, resembling the coils of a gigantic serpent.

"Before sunset I reached Louisville, distant from Hardenburgh fifty-five miles, where the Pigeons were

still passing, and this continued for three days in succession.

“The people were indeed all up in arms, and shouting on all sides at the passing flocks. The banks of the river were crowded with men and children, for here the Pigeons flew rather low as they passed the Ohio. This gave a fair opportunity to destroy them in great numbers. For a week or more the population spoke of nothing but Pigeons, and fed on no other flesh but that of Pigeons: The whole atmosphere during this time was strongly impregnated with the smell appertaining to their species.

“It is extremely curious to see flocks after flocks follow exactly the very evolutions performed by a preceding one, when they arrived at the place where these manœuvres were displayed. If a hawk, for instance, has chanced to charge on a portion at a certain spot, no matter what the zigzags, curved lines, or undulations of lines might have been during the affray, all the following birds always keep the same track; so that if the traveller happens to see one of those attacks, and feels a wish to have it repeated, he may do so by waiting for a short time.

“It may not, perhaps, be out of place to attempt an estimate of the number of Pigeons contained in those mighty flocks, and the quantity of food daily consumed by its members. The inquiry will show the astonishing bounty of the Creator in his works, and how universally this bounty has been granted to every living thing on that vast continent of America.

“We shall take, for example, a column of one mile in breadth, which is far below the average size, and suppose it passing over us without interruption

for three hours, at the rate mentioned above, of one mile per minute. This will give us a parallelogram of one hundred and eighty miles by one, covering one hundred and eighty square miles, and allowing two Pigeons to the square yard, we have one billion one hundred and fifteen millions one hundred and thirty-six thousand Pigeons in one flock; and as every Pigeon consumes fully half a pint of food per day, the quantity must be eight millions seven hundred and twelve thousand bushels per day, which is required to feed such a flock.

“ As soon as these birds discover a sufficiency of food to entice them to alight, they fly round in circles, reviewing the country below, and at this time exhibit their phalanx in all the beauties of their plumage; now displaying a large glistening sheet of bright azure, by exposing their backs to view, and suddenly veering, exhibit a mass of rich deep purple. They then pass lower, over the woods, and are lost among the foliage for a moment, but they reappear as suddenly above; after which they alight, and, as if affrighted, the whole again take to wing, with a roar equal to loud thunder, and wander swiftly through the forest to see if danger is near. Impelling hunger, however, soon brings them all to the ground, and then they are seen industriously throwing up the fallen leaves to seek for the last beech-nut or acorn; the rear ranks continually rising, passing over, and alighting in front in such quick succession, that the whole still bears the appearance of being on the wing. The quantity of ground thus swept up, or, to use a French expression, *moissonnée*, is astonishing, and so clean is this work, that gleaners never find it worth their while to follow where the Pigeons have been. On such occasions, when the woods are

thus filled with them, they are killed in immense numbers, yet without any apparent diminution. During the middle of the day, after their repast is finished, the whole settle on the trees to enjoy rest, and digest their food; but as the sun sinks in the horizon, they depart *en masse* for the roosting place, not unfrequently hundreds of miles off, as has been ascertained by persons keeping account of their arrival and of their departure from their curious roosting places, to which I must now conduct the reader.

"To one of those general nightly rendezvous, not far from the banks of Green River, in Kentucky, I paid repeated visits. It was, as is almost always the case, pitched in a portion of the forest where the trees were of great magnitude of growth, but with little underwood. I rode through it lengthwise upward of forty miles, and crossed it in different parts, ascertaining its average width to be rather more than three miles. My first view of it was about a fortnight subsequent to the period when they had chosen this spot, and I arrived there nearly two hours before the setting of the sun. Few Pigeons were then to be seen, but a great number of persons with horses and waggons, guns and ammunition, had already established different camps on the borders. Two farmers from the vicinity of Russelsville, distant more than a hundred miles, had driven upwards of three hundred hogs to be fattened on Pigeon-meat; and here and there the people, employed in picking and salting what had already been procured, were seen sitting in the centre of large piles of these birds, all proving to me that the number resorting there at night must be immense, and probably consisting of all those then feeding in Indiana, some distance beyond Jeffersonville,

not less than one hundred and fifty miles off. The dung of the birds was several inches deep, covering the whole extent of the roosting place like a bed of snow. Many trees, two feet in diameter, I observed, were broken at no great distance from the ground, and the branches of many of the largest and tallest so much so, that the desolation already exhibited equalled that performed by a furious tornado. As the time elapsed, I saw each of the anxious persons about to prepare for action; some with sulphur in iron pots, others with torches of pine-knots, many with poles, and the rest with guns double and treble charged. The sun was lost to our view, yet not a Pigeon had yet arrived,—but all of a sudden I heard a general cry of '*Here they come!*' The noise which they made, though distant, reminded me of a hard gale at sea, passing through the rigging of a close-reefed vessel. As the birds arrived, and passed over me, I felt a current of air that surprised me. Thousands were soon knocked down by the polemen. The current of birds, however, kept still increasing. The fires were lighted, and a most magnificent as well as wonderful and terrifying, sight was before me. The Pigeons, coming in by millions, alighted every where, one on the top of another, until masses of them, resembling hanging swarms of bees as large as hogsheads, were formed on every tree in all directions. These heavy clusters were seen to give way, as the supporting branches, breaking down with a crash, came to the ground, killing hundreds of those which obstructed their fall, forcing down other equally large and heavy groups, and rendering the whole a scene of uproar and of distressing confusion. I found it quite useless to speak, or even to shout to those persons nearest me. The reports even of

the different guns were seldom heard, and I knew only of their going off by seeing the owners reload them.

“No person dared venture within the line of devastation, and the hogs had been penned up in due time, the picking of the dead and wounded sufferers being left for the next morning’s operation. Still the Pigeons were constantly coming, and it was past midnight before I perceived a decrease in the number of those that arrived. The uproar continued, however, the whole night; and as I was anxious to know to what distance the sound reached, I sent off a man, who, by his habits in the woods, was able to tell me, two hours afterwards, that at three miles he heard it distinctly. Towards the approach of day the noise rather subsided; but, long ere the objects were at all distinguishable, the Pigeons began to move off in a direction quite different from that in which they had arrived the day before, and at sunrise none that were able to fly remained. The howling of the wolves now reached our ears, and the foxes, the lynxes, the cougars, bears, racoons, opossums, and polecats, were seen sneaking off the spot, whilst the eagles and hawks of different species, supported by a horde of buzzards and carrion-crows, came to supplant them, and reap the benefits of this night of destruction.

“It was then that I, and all those present, began our entry amongst the dead and wounded sufferers. They were picked up in great numbers, until each had as many as could possibly be disposed of; and afterwards the hogs and dogs were let loose to feed on the remainder.

“Persons unacquainted with these birds must naturally conclude, that such dreadful havoc must

soon put an end to the species; but this is very far from being the case, for by long observation I have satisfied myself, that, as they not unfrequently quadruple their numbers yearly, always at least double it, nothing but the gradual diminution of our forests can accomplish their decrease. In 1805 I have seen schooners loaded in bulk with Pigeons caught up the Hudson River, coming into the wharf at New York, and those birds sold for a cent a piece. I knew a man in Pennsylvania who caught and killed upwards of five hundred dozen in a clap-net in a day, sweeping sometimes twenty dozen or more at one haul.

“ I have also seen the negroes at the United States Salines, or salt-works of Shawanee Town, wearied with killing Pigeons, as they alighted to drink the water issuing from the leading pipes, for weeks at times; and yet, in 1826, in Louisiana, I saw congregated flocks of those birds as numerous as ever I had seen them before, during a residence of nearly thirty years in the United States.

“ The greater portion of the time alluded to has been employed in studying, with the greatest care, the particular habits of each feathered individual in North America, with a view to publish at last its complete ornithology;—but to return to our more immediate subject.

“ The breeding of the wild Pigeons, and the places chosen for that purpose, are points of great interest. As I have said before, the time set apart for this is not influenced by climate or season, but generally takes place where and when food is most plentiful and most attainable, and always at a convenient distance from the water, and in high timbered forests. The spot generally chosen is not, like that above

described, a scene of confusion and death, but one where, it is no exaggeration to say, the tenderest affection seems to prevail. To this place these countless myriads of Pigeons fly and settle to coo, and, with parental care, begin their nests in general peace and harmony. On the same tree, from fifty to one hundred nests may be seen, formed of slight materials, being only composed of a few dried twigs, crossed in different ways, supported by suitable forks in the branches from the lowest to the highest, and each mate partakes in the task of incubation. The females lay two white eggs each, proportioned to the size of the bird, and, as they sit the greater portion of this precious time, the males feed them from bill to bill, with amorous tenderness and care.

“The young are hatched, and would grow and leave the nest in course of time, did not man discover the place, and commence his work of devastation. Armed with axes their enemies reach the spot, to seize and destroy all they can. The trees are felled, and are made to fall in such a way, that the cutting of one causes the fall of one or two more, or shakes others in such a manner, that the squabs, or young Pigeons, are violently hurried to the ground. Their tender juicy flesh is no great trial, it may be supposed, to man’s compassion, and the poor birds are eaten up under the eye of their fluttering parents, without any pangs of remorse.”

In England formerly, when beech woods were more extensive than they now are, the number of Wood Pigeons was astonishing. Seven or eight were frequently killed at one shot, and, as in America, men lay in wait at the close of evening, to knock them down when they went to roost in the woods and groves.

CHAP. III.

Of Birds of the Pie Order...The Raven...The Carrion Crow...The Rook...The Royston Crow...The Jackdaw...The Cornish Chough...The Hottentot Crow...The Bald Crow...The Variegated, and White-breasted Crow...The Magpie...The Jay...The Chinese, Peruvian, Canada, Siberian, and Yellow-bellied Jays...The Nutcracker...The Roller...The Hoopoe...The Promerops...The Kingfisher...The Cuckoo...The Woodpecker...The Oriole...The Nuthatch...The Bee-eater...The Wryneck...The Creeper...The Toucan...The Momot...The Hornbill...The Rhinoceros, Helmet, and Pied Hornbills...The Parrot...The Macaw, the Lory, the Paroquet, and Cockatoo...The Ani...The Wattle Bird...The Grackle...The Bird of Paradise...The King Bird of Paradise...The Magnificent Bird of Paradise...The Beef-eater...The Curucui...The Barbet...The Jacamar...The Tody...The Humming-Bird.

Of the Order of Pies.

THE RAVEN.



THE RAVEN, the CARRION CROW, and the ROOK, are birds so well known, that a long description would but obscure our ideas of them. The Raven is the largest of the three, and distinguished from the rest, not only by the size, but by his bill being somewhat

more hooked than that of the rest. As for the Carrion Crow and the Rook, they so strongly resemble each other, both in make and size, that they are not easily distinguished asunder. The chief difference to be found between them lies in the bill of the Rook; which, by frequently being thrust into the ground to fetch out grubs and earth-worms, is bare of feathers as far as the eyes, and appears of whitish colour. It differs also in the purple splendour or gloss of its feathers, which in the Carrion Crow are of a more dirty black. Nor is it amiss to make these distinctions, as the Rook has but too frequently suffered for its similitude to the Carrion Crow; and thus a harmless bird, that feeds only upon insects and corn, has been destroyed for another that feeds upon carrion, and is often destructive among young poultry.

The Raven is about two feet in length, and four in breadth. Its bill is strong, and very thick at the base; it measures somewhat more than two inches and a half in length, and is covered with strong hairs or bristles, which extend above half its length, covering the nostrils: the general colour of the upper parts is a fine glossy black, reflecting a blue tint in particular lights; the under parts are duller, and of a dusky hue.

The Raven is a bird found in every region of the world; strong and hardy, he is uninfluenced by the change of the weather; and when other birds seem numbed with cold, or pining with famine, the Raven is active and healthy, busily employed in prowling for prey, or sporting in the coldest atmosphere. As the heats at the line do not oppress him, so he bears the cold of the polar countries with equal indifference. He is sometimes indeed seen milk-white, and this may probably be the effect of the rigorous

climates of the north. A Raven may be reclaimed to almost every purpose to which birds can be converted. He may be trained up for fowling like a hawk; he may be taught to fetch and carry like a spaniel; he may be taught to speak like a parrot; but the most extraordinary of all is, that he can be taught to sing like a man. I have heard (says a modern author) a Raven sing the Black Joke with great distinctness, truth, and humour.

Indeed, when the Raven is taken as a domestic, he has many qualities that render him extremely amusing. Busy, inquisitive, and impudent, he goes every where, affronts and drives off the dogs, plays his pranks on the poultry, and is particularly assiduous in cultivating the goodwill of the cook maid, who seems to be the favourite of the family. But then, with the amusing qualities of a favourite, he often also has the vices and defects. He is a glutton by nature, and a thief by habit. He does not confine himself to petty depredations on the pantry or the larder; he soars at more magnificent plunder; at spoils which he can neither exhibit nor enjoy; but which, like a miser, he rests satisfied with having the satisfaction of sometimes visiting and contemplating in secret. A piece of money, a tea-spoon, or a ring, are always tempting baits to his avarice; these he will slyly seize upon, and, if not watched, will carry to his favourite hole.

In his wild state, the Raven is an active and greedy plunderer. Nothing comes amiss to him. If in his flights he perceives no hope of carrion, and his scent is so exquisite, that he can smell it at a vast distance, he then contents himself with more unsavoury food, fruits, insects, and the accidental desert of a dung-hill. This bird chiefly builds its nest in trees, and

lays five or six eggs of a pale green colour, marked with small brownish spots.

Notwithstanding the injury these birds do in picking out the eyes of sheep and lambs, when they find them sick and helpless, a vulgar respect is paid them as being the birds that fed the prophet Elijah in the wilderness. This prepossession in favour of the Raven is of very ancient date, as the Romans themselves, who thought the bird ominous, paid it, from motives of fear, the most profound veneration. One of these that had been kept in the temple of Castor, as Pliny informs us, flew down into the shop of a tailor, who took much delight in the visits of his new acquaintance. He taught the bird several tricks; but particularly to pronounce the name of the Emperor Tiberius and the whole royal family. The tailor was beginning to grow rich by those who came to see this wonderful Raven, till an envious neighbour, displeased at the tailor's success, killed the bird, and deprived the tailor of his future hopes of fortune. The Romans, however, took the poor tailor's part; they punished the man who offered the injury, and gave the Raven all the honours of a magnificent interment.

Birds in general live longer than quadrupeds; and the Raven is said to be one of the most long-lived of the number. Some of them have been known to live near a hundred years. This animal, indeed, seems possessed of those qualities that generally produce longevity, namely, a good appetite, and great exercise.

THE CARRION CROW.

THIS bird is about eighteen inches in length; its breadth above two feet. Crows are more numerous than ravens, and as widely spread. They live mostly in woods, chiefly in pairs, and builds their nests on trees: the female lays five or six eggs much like those of a raven. They remain in England all the year. They feed on putrid flesh of all sorts; likewise on eggs, worms, insects, and various sorts of grain. Even pigeons, rabbits, chickens, and young ducks are not safe from their attacks. The Crow is a bold bird; neither the kite, buzzard, nor raven can approach its nest without being driven away; and when it has young, it will even fall upon the peregrine falcon, and bring it to the ground by a single stroke of the bill.

THE ROOK



Is about the size of the carrion crow, and, excepting its more glossy plumage, very much resembles it. The base of the bill and nostrils, as far as the eyes, is naked, in which it differs from all the rest, occasioned, it is said, by thrusting its bill into the earth in search of worms: but as the same

appearance has been observed in such as have been brought up tame and unaccustomed to that mode of subsistence, we are inclined to consider it an original peculiarity. Rooks are useful in preventing a too great increase of that destructive insect the chafer or dor-beetle, and thereby make large recompense for the depredations they may occasionally commit on the corn fields. They are gregarious, and fly in immense flocks at morning and evening to and from their roosting places in quest of food. During the breeding time they live together in large societies, and build their nests on the tallest trees close to each other, frequently in the midst of large and populous towns. These rookeries, however, are often the scenes of bitter contests; the new comers are frequently driven away by the old inhabitants, their half built nests torn in pieces, and the unfortunate couple forced to begin their work anew in some more undisturbed situation. But though bad neighbours, the males are good husbands, as they begin to feed the hens before the latter commence laying, and continue to do so through the whole season of incubation. The Rook is a bird of great sagacity. Dr. Darwin remarks, that Rooks are obviously more conscious of danger from mankind than most other birds are. Whoever has paid the least attention to them may perceive that they are quite sensible of the danger being greater when a man is armed with a gun than when he has no weapon with him. If, in the spring of the year, a person with a gun walk under a rookery, the inhabitants of the trees rise on their wings, and scream to the unfledged young to cower into their nests from the sight of the enemy. This uniformly occurs, and hence the country people assert that Rooks can smell gunpowder.

THE ROYSTON CROW

Is about the size of the two former. The breast, belly, back, and upper part of the neck, being of a pale ash colour; the head and wings glossed over with a fine blue. He is a bird of passage, visiting this kingdom in the beginning of winter, and leaving it in the spring. He breeds, however, in different parts of the British dominions; and his nest is common enough in trees in Ireland.

THE JACKDAW.



THIS bird is considerably less than the rook, being only thirteen inches in length. The head is large, and the bill long, in proportion to the body. The eyes are white, and the hinder part of the head and neck are of a hoary gray colour; the rest of the plumage is of a fine glossy black above; beneath it has a dusky hue: the legs are black. It remains with us the whole year, and in great flocks frequents churches, old towers, and ruins, and sometimes, though rarely, even chimneys, hollow trees, and rabbit burrows, where it builds its nest: the female

lays five or six eggs, paler than those of the crow, and smaller. Jackdaws are easily tamed, and may be taught to pronounce several words: they will conceal part of their food, and with it small pieces of money or toys. They feed on insects, grain, fruit, and small pieces of flesh, and are said to be fond of partridges' eggs. They have also been seen to catch fish.

There is a variety of this bird in Switzerland, which has a white collar round its neck; and in Norway and other cold countries they have been found perfectly white.

THE RED LEGGED CROW, OR CORNISH CHOUGH,

Is like a jackdaw, but larger, and almost the size of a crow. The feet and legs are long, like those of a jackdaw, but of a red colour; and the plumage is of a purplish black all over. It frequents rocks, old castles, and churches, by the seaside, like the daw; and with the same noisy assiduity. It is only seen along the western coasts of England. It is attracted by glittering objects, and has been known to take lighted pieces of wood from the fire. By tearing holes in the straw with its long bill, it does much injury to thatched houses.

There are several foreign birds which bear a near relation to the Crow. The HOTTENTOT CROW of the Cape of Good Hope is remarkable for two bunches of stiff hair about three inches long, which spring out from the corners of his mouth, and which have the full effect of a pair of whiskers. The bird itself is not above the size of a blackbird.

The BALD CROW, which inhabits Cayenne, is as singular for an opposite quality, which is, that the

fore part of the head, as far as the crown, is entirely bare of feathers.

In Mexico there are **PIED RAVENS**, and in Norway and Iceland there are some which are white.

The **VARIEGATED CROW** of Ferroe in its plumage somewhat resembles the magpie; and the **WHITE-BREASTED CROW**, which inhabits China, Indostan, and Africa, is still more beautiful. There are almost as many varieties in the daw species.

THE MAGPIE



Is about eighteen inches in length. The head, neck, and breast are of a deep black, finely contrasting with the snowy whiteness of the under parts; the neck feathers are very long, and extend down the back, leaving only a small space, of a grayish ash colour, between them and the tail coverts, which are black; the plumage in general is glossed with green, purple, and blue, which catch the eye in different lights; the tail is very long and wedge-shaped; the under tail coverts, thighs, and legs, are black; on the throat and part of the neck there is a kind of feathers, mixed with the others, resembling strong whitish hairs. Indeed, were its other accomplishments equal to its beauty, few birds could be put in competition. Its black, its white, its green, and

purple, with the rich and gilded combination of the glosses on its tail, are as fine as any that adorn the most beautiful of the feathered tribe. But it has too many of the qualities of a beau, to depreciate these natural perfections: vain, restless, loud, and quarrelsome, it is an unwelcome intruder every where; and never misses an opportunity, when it finds one, of doing mischief.

The Magpie bears a great resemblance to the butcher-bird in its bill, which has a sharp process near the end of the upper chap, as well as in the shortness of its wings, and the form of the tail, each feather shortening from the two middlemost. But it agrees still more in its food, living not only upon worms and insects, but also upon small birds, when they can be seized. A wounded lark, or a young chicken separated from the hen, are sure plunder; and the Magpie will even sometimes set upon and strike a blackbird.

The same insolence prompts it to seize the largest animals when its insults can be offered with security. They often are seen perched upon the back of an ox or a sheep, pecking up the insects to be found there, chattering and tormenting the poor animal at the same time, and stretch out their necks for combat, if the beast turns its head backward to apprehend them. They seek out also the nests of birds; and, if the parent escapes, the eggs make up for the deficiency: the thrush and the blackbird are but too frequently robbed by this assassin, and this in some measure causes their scarcity.

No food seems to come amiss to this bird; it shares with ravens in their carrion, with rooks in their grain, and with the cuckoo in their eggs: but it seems possessed of a providence seldom usual

with gluttons: for when it is satisfied for the present, it lays up the remainder of the feast for another occasion. It will even in a tame state hide its food when it has done eating, and after a time return to the secret hoard with renewed appetite and vociferation.

In all its habits it discovers a degree of instinct unusual to other birds. Its nest is not less remarkable for the manner in which it is composed, than for the place the Magpie takes to build it in. The nest is usually placed conspicuous enough, either in the middle of some hawthorn bush, or on the top of some high tree. The place, however, is always found difficult of access; for the tree pitched upon usually grows in some thick hedgerow, fenced by brambles at the root; or sometimes one of the higher bushes is fixed upon for the purpose. When the place is thus chosen as inaccessible as possible to men, the next care is to fence the nest above, so as to defend it from all the various enemies of the air. The kite, the crow, and the sparrowhawk, are to be guarded against; as their nests have been sometimes plundered by the Magpie, so it is reasonably feared that they will take the first opportunity to retaliate. To prevent this, the Magpie's nest is built with surprising labour and ingenuity.

The body of the nest is composed of hawthorn branches; the thorns sticking outward, but well united together by their mutual insertions. Within it is lined with fibrous roots, wool, and long grass, and then nicely plastered all round with mud and clay. The body of the nest being thus made firm and commodious, the next work is to make the canopy, which is to defend it above. This is composed of the sharpest thorns, woven together in such

a manner as to deny all entrance except at the door, which is just large enough to permit egress and regress to the owners. In this fortress the male and female hatch and bring up their brood with security, sheltered from all attacks but those of the climbing schoolboy, who often finds his torn and bloody hands too dear a price for the eggs or the young ones. The Magpie lays six or seven eggs, of a pale green colour, spotted with brown.

This bird, in its domestic state, preserves its natural character with strict propriety. The same noisy, mischievous habits attend it to the cage that marked it in the woods; and being more cunning, so it is a more docile bird than any other taken into keeping. Those who are desirous of teaching it to speak have a foolish custom of cutting its tongue, which only puts the poor animal to pain, without improving its speech in the smallest degree. Its speaking is sometimes very distinct; but its sounds are too thin and sharp to be an exact imitation of the human voice, which the hoarse raven and parrot can counterfeit more exactly.

In the north of England, if a Magpie be observed flying alone, it is thought a sign of ill luck; two forebode something fortunate; three, a funeral; and four, a wedding.

There are some foreign birds of this species, but they are scarcely deserving of notice.

To this tribe we may refer the JAY, which is one of the most beautiful of the British birds. The forehead is white, streaked with black; the head is covered with very long feathers, which it can erect into a crest at pleasure; the whole neck, back, breast, and belly, are of a faint purple, dashed with

gray ; the wings are most beautifully barred with a lovely blue, black, and white ; the tail is black, and the feet of a pale brown. Like the magpie it feeds upon fruits, will kill small birds, and is extremely docile. The voice of the Jay is harsh, grating, and



unpleasant. Upon seeing the sportsman, he gives, by his cries, the alarm of danger, and thereby defeats his aim. The Jay builds in woods, and makes an artless nest of sticks, fibres, and tender twigs ; the female lays five or six eggs, of a grayish ash colour, mixed with green, and faintly spotted with brown.

Like the magpie, the Jay is talkative and ready to imitate sounds. One of them has been known to mimic so exactly the noise made by the action of a saw, as to induce passengers to believe that a carpenter was at work in the house. Another had learned, when cattle approached, to set a cur dog on them, by whistling and calling him by name. The poor Jay, however, at last paid dearly for his mischievous tricks. Having set his quadruped associate upon a cow which was big with calf, the cow was much hurt, he was complained of as a nuisance, and his owner was obliged to destroy him.

Many of the foreign birds of the Jay kind are

exceedingly beautiful. The CHINESE JAY is of two kinds, the red-billed and that with a bluish bill. They are both elegant birds, their plumage being finely varied with patches of a fine velvet black, particularly about the head and throat. The PERUVIAN JAY is of a tender green, which by insensible shades assumes a bluish cast in different parts of the body. The BROWN JAY of Canada and the SIBERIAN JAY are less remarkable. At Cayenne there are two other remarkable species, one of which has three white spots on each side of the head; and the other, which is called the YELLOW-BELLIED JAY, is further distinguished by a golden streak upon the crown of the head.

THE NUTCRACKER

Is by some naturalists considered as of a distinct genus, by others it is classed with the crow; though in its manners it most resembles the jay, laying up a store of nuts and acorns, and inhabiting the pine forests like that bird. It is the size of a magpie, and the general colour of its plumage is a rusty brown, marked with triangular white spots. They are very plenty in Germany, and are rarely seen in England.

THE ROLLER

Is a genus of birds not less conspicuous for beauty than any that has been mentioned. The GARRULOUS ROLLER, so called from its chattering noise, is the only species with which the inhabitants of Europe are acquainted. It is of the size of a jay, and is exceedingly beautiful. The head, neck, and breast are of a light bluish green; the upper part of the

body of a reddish brown ; the tail is forked, and of a light blue ; the legs are remarkably short. It is a



bird of passage, common in Germany, but it seldom visits England.

The CHINESE, the CAYENNE, and the ABYSSINIAN ROLLERS are all distinguished by the brilliancy of their plumage, but differ little in any material respect from the preceding.

THE HOPOE.

IF we ascend in the scale of beauty, the next bird that demands our attention is the Hoopoe. Of this there is only one species known to the Europeans, which is however diffused over the whole of the Old Continent. It weighs about twelve ounces, and is twelve inches in length, the extent of its wings being nineteen inches across. The bill is long, black, and somewhat curved. The neck is pale reddish brown ; the breast and belly white ; the lesser coverts of the wing light brown ; the back, scapulars, and wings crossed with black and white, the rump white, and the tail white, marked with black in the form of a crescent. But the distinguishing character is a

beautiful crest of about two inches high, which is of a pale orange tipped with black, and which the bird can erect at pleasure. The food of this bird is



insects. It is a solitary bird, two of them being seldom found together. In some places it is accounted good eating.

In Madagascar there is found another species of Hoopoe. The *PROMEROPS* also, which is found in South America and the southern parts of Africa and India, is generally considered as a species of Hoopoe. The body is the size of a pigeon, though the whole bird, including the tail, measures nearly four feet. The head and neck, and upper part of the belly, are of a shining green; the rest of the plumage black, with a gloss of violet. The scapular feathers, which are erect, are black, with the ends and under parts shining green. Besides these, on each side of the tail are six falci-form feathers which hang over each thigh. This bird is a native of New Guinea.

THE KINGFISHER



Is a bird better known in England than the preceding, and is perhaps the most elegant bird which is produced in these northern climates.

The Kingfisher is not much larger than a swallow; its shape is compact; the legs, however, are disproportionably small, and the bill disproportionably long; it is two inches from the base to the tip; the upper chap black, and the lower yellow; but the colours of this bird atone for whatever is inelegant in its form; the crown of the head and the coverts of the wings are of a deep blackish green, spotted with bright azure; the back and tail are of the most resplendent azure; the whole under side of the body is orange coloured; a broad mark of the same passes from the bill beyond the eyes; beyond that is a large white spot: the tail is short, and consists of twelve feathers of a rich deep blue; the feet are of a reddish yellow, and the three joints of the utmost toe adhere to the middle toe, while the inner toe adheres only by one.

From the diminutive size, the slender short legs, and the beautiful colours of this bird, no person would suppose it one of the most rapacious little

animals that skims the deep. Yet it is for ever on the wing, and feeds on fish, which it takes in surprising quantities, when we consider its size and figure. It chiefly frequents the banks of rivers. There it preys on the smaller fish, and sits frequently on a branch projecting over the current; there it remains motionless, and often watches whole hours to catch the moment when a little fish springs under its station; it dives perpendicularly into the water, where it continues several seconds, and then brings up the fish, which it carries to land, beats to death, and then swallows; but it afterwards throws up the indigestible parts. When this bird cannot find a projecting bough, it sits on some stone near the brink, or even on the gravel; but the moment it perceives the fish, it takes a spring upward, of twelve or fifteen feet, and drops perpendicularly from that height. Often it is observed to stop short in its rapid course, and remain stationary, hovering like a hawk, over the same spot for several seconds. Such is its mode in winter, when the muddy swell of the stream, or the thickness of the ice, constrains it to leave the rivers, and ply along the sides of the unfrozen brooks. In this way it traverses many leagues. While it remains suspended in the air, in a bright day, the plumage exhibits a beautiful variety of the most dazzling and brilliant colours.

The Kingfisher builds its nest by the riverside, in a hole which it burrows out itself, or in the deserted hole of a rat. In these holes, which, from the remains of fish brought there, are very fœtid, the Kingfisher is often found with from five eggs to nine. There the female continues to hatch even though disturbed; and though the nest be robbed, she will again return and lay there. The male, whose

fideliſty exceeds even that of the turtle, brings her large provisions of fiſh while ſhe is thus employed ; and ſhe, contrary to moſt other birds, is found plump and fat at that ſeaſon.

The ancients, to whom it was known by the name of the Halcyon, have had their fables concerning this bird, and ſo have the modern vulgar. It is an opinion generally received among the latter, that the fleſh of the Kingfiſher will not corrupt, and that it will even baniſh all vermin. This has no better foundation than that which is ſaid of its always pointing, when hung up dead, with its breaſt to the north. Its feathers are employed for many ſuperſtitious uſes by the Tartars and the Asiatics, who look upon them as invaluable amulets, and as enabling them to inſpire women with love. The only truth that can be affirmed of this bird when killed is, that its fleſh is utterly unfit to be eaten ; while its beautiful plumage preſerves its luſtre longer than that of any other bird we know.

Of this bird there are about thirty-fix ſpecies, foreign and domeſtic.

THE CUCKOO.

FROM theſe elegant animals we proceed to one, which, if it cannot boaſt much variety and beauty of plumage, is yet conſpicuous for the lightneſs and elegance of its form, and for its peculiar habits. This ſingular bird is about fourteen inches in length, ſhaped ſomewhat like a magpie, and diſtinguiſhed from all other birds by its round prominent noſtrils. The head, neck, back, and wing coverts are of a dove colour ; the throat is a pale gray ; the breaſt and belly are white, croſſed with

wavy lines of black ; the tail consists of ten feathers ; the two middle ones black, with white tips, the others dusky, and marked with alternate spots of white on each side of the shaft. The legs are of a



yellow colour, and the claws white. The plumage of the young birds is chiefly brown, mixed with a ferruginous hue and black. Having disappeared all the autumn and winter, it discovers itself in our country early in the spring, by its well known call. Its note is heard earlier or later as the season seems to be more or less forward, and the weather more or less inviting. From the cheerful voice of this bird the farmer may be instructed in the real advancement of the year. His note is pleasant though uniform ; and, from an association of ideas, seldom occurs to the memory without reminding us of the sweets of summer. There is a popular superstition that he who hears the Cuckoo before he has heard the nightingale will be unsuccessful in love. To this idea Milton elegantly alludes in his Sonnet to the Nightingale.

It was once doubted, whether these birds were carnivorous ; but Reaumur was at the pains of breeding up several, and found that they would feed upon

bread or corn ; but flesh and insects were their favourite nourishment. Their gluttony is not to be wondered at, when we consider the capacity of their stomach, which is enormous, and reaches from the breastbone to the vent.

The female Cuckoo, in general, makes no nest of her own. She has, however, been known to rear her own young. But, usually, she repairs for that purpose to the nest of some other bird, generally the water-wagtail or hedge-sparrow, and having devoured the eggs of the owner, lays her egg in the place. She usually lays but one, which is speckled, and of the size of a blackbird's. This the fond foolish bird hatches with great assiduity, and when excluded, finds no difference in the great ill looking changeling from her own. To supply this voracious creature, the credulous nurse toils with unusual labour, no way sensible that she is feeding up an enemy to her race, and one of the most destructive robbers of her future progeny.

This intrusion often occasions some disorder, for the hedge sparrow, at intervals, while she is sitting, not only throws out some of her own eggs, but sometimes injures them in such a manner that they become addled ; so that it frequently happens that not more than two or three of the parent bird's eggs are hatched ; but it has never been observed that the egg of the Cuckoo has either been thrown out or injured. The newly hatched Cuckoo itself also contrives to raise up the young, and throw them out of the nest, and Nature seems to have provided for its doing so, by giving to it a broad back, with a considerable depression in the middle ; which shape it loses as soon as it has no longer any use for it. When the hedge sparrow has set her usual time, and dis-

engaged the young Cuckoo and some of her own offspring from the shell, her own young ones and any of her eggs that remain unhatched are turned out of the nest. The young bird generally continues three weeks in the nest before it flies; and the foster parent feeds it more than five weeks after this period.

All the little birds of the grove seem to consider the young Cuckoo as an enemy, and revenge the cause of their kind by their repeated insults. They pursue it whenever it flies, and oblige it to take shelter in the thickest branches of some neighbouring tree. All the smaller birds form the train of its pursuers: but the wryneck, in particular, is found the most active in the chase; and thence it has been called by many the Cuckoo's attendant and provider. But it is very far from following with a friendly intention; it only pursues as an insulter, or a spy, to warn all its little companions of the Cuckoo's depredations.

Such are the manners of this bird while it continues to reside, or to be seen amongst us. But in the first week of July the old ones quit this country, and the young ones follow in succession; and as its new abode is not known, there are conflicting opinions on the subject. Some suppose that it lies hid in hollow trees; and others that it passes into warmer climates. Which of these opinions is true is uncertain, as there are no facts related on either side that can be totally relied on. To support the opinion that they remain torpid during the winter, at home, Willoughby introduces the following story, which he delivers upon the credit of another:—"The servants of a gentleman, in the country, having stocked up, in one of their meadows, some

old dry rotten willows, thought proper, on a certain occasion, to carry them home. In heating a stove, two logs of this timber were put into the furnace beneath, and fire applied as usual. But soon, to the great surprise of the family, was heard the voice of a Cuckoo, singing three times, from under the stove. Wondering at so extraordinary a cry in winter time, the servants ran and drew the willow logs from the furnace, and in the midst, one of them saw something move: wherefore, taking an ax, they opened the hole, and thrusting in their hands, first they plucked out nothing but feathers; afterwards they got hold of a living animal; and this was the Cuckoo that had waked so very opportunely for its own safety. It was, indeed," continues our historian, "brisk and lively, but wholly naked and bare of feathers, and without any winter provision in its hole. This Cuckoo the boys kept two years afterwards alive in the stove; but whether it repaid them with a second song, the author of the tale has not thought fit to inform us."

The most probable opinion on this subject is, that as quails and woodcocks shift their habitation in winter, so also does the Cuckoo; but to what country it retires, or whether it has been ever seen on its journey, are questions that we are wholly incapable of resolving.

Of this bird there are many kinds in various parts of the world, not only differing in their colours but their size. Latham makes no less than forty species. There is a large spotted Cuckoo in the south of Spain; and at the Cape of Good Hope there is a black crested species. Only the common and spotted Cuckoo have been seen in Europe.

But the most singular of this species is the Cucu-

LUS INDICATOR, BEE CUCKOO, or MOROC, which is a native of the Cape, and has the faculty of pointing out to man, and to the quadruped called ratel, the nests of the wild bees. It is exceedingly fond of honey and of the bee maggots, and its services are generally rewarded by leaving it a small portion of the spoil. In its external appearance it differs not much from the common sparrow, except in being somewhat larger, and of a lighter colour. It has also a white spot on each shoulder, and its tail feathers are dashed with white. The morning and evening are its principal meal times; at least, it is then that it shows the greatest inclination to come forth, and with a grating cry of *cheer, cheer, cheer*, to excite the attention of the ratel, as well as of the Hottentots and colonists. Somebody then generally repairs to the place whence the sound proceeds; when the bird, continually repeating its cry of *cheer, cheer, cheer*, flies on slowly, and by degrees, towards the quarter where the bees have taken up their abode. The persons thus invited accordingly follow; taking care at the same time not to frighten their guide by any unusual noise, but rather to answer it now and then with a soft and gentle whistle, by way of letting the bird know that its call is attended to. When the bees' nest is at some distance, the bird often makes long stages or flights, waiting for its sporting companions between each flight, and calling to them again to come on; but it flies to shorter distances, and repeats its cry more frequently and with more earnestness, as they approach nearer to the nest. When the bird has sometimes, through its impatience, got too far ahead of its followers, but particularly when, from the unevenness of the ground, they have not been able to keep pace with

it, it has flown back to meet them, and with redoubled cries has denoted still greater impatience, as though reproaching them for being so tardy. When it comes to the bees' nest, whether in the cleft of a rock, the hollow of a tree, or a cavity in the earth, it hovers over the spot for a few seconds; after which it sits in silence, and for the most part concealed, in some neighbouring tree or bush, in expectation of what may happen, and with a view of receiving its share of the booty.

THE WOODPECKER.



THESE birds live chiefly upon the insects contained in the body of trees; and for this purpose are furnished with a straight, hard, strong, angular, and sharp bill, made for piercing and boring. They have a tongue of a very great length; round, ending in a sharp, stiff, bony thorn, dentated on each side, to strike ants and insects when dislodged from their cells. Their legs are short and strong, for the purposes of climbing. Their toes stand two forward, and two backward; which is particularly serviceable in holding by branches of trees. They have hard stiff tails, to lean upon when climbing. They feed only upon insects, and want that intestine which anatomists call

the cœcum; a circumstance peculiar to this tribe only.

Of this bird there are more than fifty species, with many varieties. They form large colonies in the forests of every part of the world. They are found from the size of a jackdaw to that of a wren, and differ greatly in colour and appearance; and agreeing only in the marks above-mentioned, or in those habits which result from so peculiar a conformation. There are about five species known to Europe, or at least in England, viz. the large **BLACK WOODPECKER**, which is seventeen inches long, and is found in Germany; the **GREEN**, and three species of spotted. The **GREEN WOODSPITE** or **WOODPECKER** is called the **Rain Fowl** in some parts of the country; because, when it makes a greater noise than ordinary, it is supposed to foretell rain. It is about the size of a jay, and weighs six ounces; the throat, breast, and belly are of a pale greenish colour; and the back, neck, and covert feathers of the wings are full green. The **GREAT SPOTTED WOODPECKER** weighs about three ounces, and is the size of a blackbird, and nine inches in length. The crown of the head is black, with a bar of crimson on the hind part of it. On each side of the neck is a spot of white; the scapulars and wing coverts are white. The back and wings are black, and the breast is yellowish gray. The **MIDDLE SPOTTED WOODPECKER** nearly resembles the preceding, but is smaller; and the **LESSER SPOTTED WOODPECKER** is scarcely an ounce in weight, and has the upper parts of the body mottled with white. All these species feed upon insects, and particularly on those which are found in decaying trees. When a Woodpecker, by its natural sagacity, finds a hollow or decayed tree where there are worms,

ants' eggs, or insects, it immediately prepares for its operations. Resting by its strong claws, and leaning on the ten hard, stiff, and sharp pointed feathers of its tail, it begins to bore with its powerful beak, until it discloses the whole internal habitation. It then sends forth a loud cry, upon which the whole insect tribe are thrown into confusion, and run hither and thither seeking for safety; while the invader luxuriously feasts upon them at leisure, darting in its long tongue, and devouring the whole brood.

The Woodpecker, however, does not confine its depredations solely to trees, but sometimes alights upon the ground, to try its fortune at an ant-hill. It first goes to their hills, which it pecks, in order to call them abroad; it then thrusts out its long red tongue, which being like a worm, and resembling their usual prey, the ants come out to settle upon it in great numbers; however, the bird, watching the properest opportunity, withdraws its tongue at a jerk, and devours the devourers. This stratagem it continues till it has alarmed their fears, or till it is quite satisfied.

As the Woodpecker is obliged to make holes in trees to procure food, so it is also to make cavities still larger to form its nest and to lay in. This is performed, as usual, with the bill; although some have affirmed that the animal uses its tongue, as a gimblet, to bore with. But this is a mistake; and those that are curious may often hear the noise of the bill making its way in large woods and forests. The Woodpecker chooses, however, for this purpose, trees that are decayed, or wood that is soft, like beech, elm, and poplar. In these, with very little trouble, it can make holes as exactly round as a mathematician could with compasses. One of these

holes the bird generally chooses for its own use, to nestle and bring up its young in; but as they are easily made, it is delicate in its choice, and often makes twenty before one is found fit to give entire satisfaction.

The Woodpecker takes no care to line its nest with feathers or straw; its eggs are deposited in the hole, without any thing to keep them warm, except the heat of the parent's body. Their number is generally five or six; always white, oblong, and of a middle size. When the young are excluded, and before they leave the nest, they are adorned with a scarlet plumage under the throat, which adds to their beauty.

The foreign birds of this genus are too numerous to specify. Let us therefore, instead of entering into the minuteness of description, select a few specimens. The **BUFF CRESTED WOODPECKER** of Surinam is in length twelve inches and a half. The whole head is crested, the fore part of which is black, the hinder part buff-coloured. The general colour of the plumage is brown black, but the sides of the neck and the breast are white streaked with black. The **MINUTE WOODPECKER** which inhabits Cayenne is only three inches and a half in length, or about the size of a wren. The **WHITE-BILLED WOODPECKER** is called the Carpenter by the Spanish Americans, from the loud noise that it makes; and the **RED-HEADED WOODPECKER**, a native of North America, is so destructive in the orchards and maize fields that a price was formerly set upon its head by some of the provincial governments.

"It is said, if you once give a dog a bad name, whether innocent or guilty (says Mr. Waterton), he never loses it: it sticks to him wherever he goes.

He has many a kick and many a blow to bear on account of it; and there is nobody to stand up for him. The Woodpecker is little better off. The proprietors of woods in Europe have long accused him of injuring their timber, by boring holes in it, and letting in the water, which soon rots it. The colonists in America have the same complaint against him. Had he the power of speech, which Ovid's birds possessed in days of yore, he could soon make a defence. 'Mighty lord of the woods,' he would say to man, 'why do you wrongfully accuse me? Why do you hunt me up and down to death for an imaginary offence? I have never spoiled a leaf of your property, much less your wood. Your merciless shot strikes me at the very time when I am doing you a service. But your short-sightedness will not let you see it, or your pride is above examining closely the actions of so insignificant a little bird as I am. If there be that spark of feeling in your breast, which they say man possesses, or ought to possess, above all other animals, do a poor injured creature a little kindness, and watch me in your woods for only one day. I never wound your healthy trees. I should perish for want in the attempt. The sound bark would easily resist the force of my bill; and were I even to pierce through it, there would be nothing inside that I could fancy, or my stomach digest. I often visit them, it is true, but a knock or two convinces me that I must go elsewhere for support; and, were you to listen attentively to the sound which my bill causes, you would know whether I am upon a healthy or an unhealthy tree. Wood and bark are not my food. I live entirely upon the insects which have already formed a lodgment in the distempered tree. When

the sound informs me that my prey is there, I labour for hours together, till I get at it; and by consuming it for my own support, I prevent its further depredations in that part. Thus, I discover for you your hidden and unsuspected foe, which has been devouring your wood in such secrecy that you had not the least suspicion it was there. The hole which I make, in order to get at the pernicious vermin, will be seen by you as you pass under the tree. I leave it as a signal, to tell you that your tree has already stood too long. It is past its prime. Millions of insects, engendered by disease, are preying upon its vitals. Ere long it will fall a log in useless ruins. Warned by this loss, cut down the rest in time, and spare, O spare the unoffending Woodpecker! ”

THE ORIOLE.

Of the Oriole there appears to be only one species known in Europe; this is by some termed the *Golden Oriole*. It is the size of a thrush, and has been called the Golden Thrush and the Witwal. The head and whole body of the male is of a rich yellow; the bill red; from that to the eye a black line: the wings black, marked with a bar of yellow, as are the ends of the feathers. The tail is black, with the end yellow. The body of the female is a dull green, with dusky wings and tail. The nest of this bird is of the shape of a purse, and rests upon the outermost twigs of tall trees. It is common in France, but has very rarely visited England.

America, however, is the country in which these birds are found in the greatest variety and the most perfect beauty. There are in fact upwards of forty species, most of which are natives of the New Conti-

ment. In Guiana and Brazil, the birds of this species take a different method to protect and hatch their nascent progeny. A traveller who walks into the forests of those countries, among the first strange objects that excite curiosity, is struck with the multitude of birds' nests hanging at the extremity of almost every branch. Many other birds build in this manner; but the chief of them are of the Oriole kind. In cultivated countries, a great part of the caution of the feathered tribe is to hide or defend their nests from the invasions of man, as he is their most dreaded enemy. But in the depth of those remote and solitary forests, where man is but seldom seen, if the monkey or the snake can be guarded against, the bird has no other enemies to fear. On the bananas and plantains of these regions, is seen the most various and the most inimical assemblage of creatures that can be imagined. The top is inhabited by monkeys of some particular tribe, that drive off all others; lower down about the great trunk, numbers of the larger snakes are found patiently waiting till some unwary animal comes within the sphere of their activity; and at the edges of the tree hang these artificial nests in great abundance, inhabited by birds of the most delightful plumage.

The nest is usually formed in this manner: when the time of incubation approaches, they fly busily about, in quest of a kind of moss, called, by the English inhabitants of those countries, *old man's beard*. It is a fibrous substance, and not very unlike hair, which bears being moulded into any form, and suffers being glued together. This, therefore, the little artist first glues by some viscous substance gathered in the forest, or sews with the leaves of the banana to the extremest branch of a tree; then

building downward, and still adding fresh materials to those already procured, a nest is formed, that depends, like a pouch, from the point of the branch: the hole to enter at is on the side; and all the interior parts are lined with the finer fibres of the same substance which composes the whole.

Such is the general contrivance of these hanging nests, which are made, by some birds, with still superior art. A little bird of the Grosbeak kind, in the Philippine Islands, makes its nest in such a manner that there is no opening but from the bottom. At the bottom the bird enters, and goes up through a funnel, like a chimney, till it comes to the real door of the nest, which lies on one side, and only opens into this funnel.

The RED-WINGED ORIOLE is found in such flocks in America, that more than three hundred are frequently caught at one draw of a net. So destructive are they to the maize, that they are usually known by the name of the Maize-thief. When taken, they immediately become tame, and are then exceedingly playful. The ICTERIC ORIOLE is domesticated for the purpose of killing insects; and the WEAVER ORIOLE is remarkable for weaving into a nest, or among the wires of its cage, such flexible substances as may be given to it.

THE NUTHATCH

WEIGHS near an ounce, and is five inches and three quarters in length. The bill is strong and straight, and three quarters of an inch long. The upper part of the plumage is of a fine bluish gray; a black stroke runs from the mouth to the eye. The cheeks are white, and the breast and belly of a dull orange

colour. This bird runs up and down the bodies of trees like the woodpecker. It feeds on insects and



nuts, which it stores in the hollow parts of the tree. It is a pretty sight, says Willoughby, to see her fetch a nut out of her hoard, place it in a chink, and then, standing above it, striking it with all its force till it breaks the shell and catches up the kernel. Doctor Plot says, that this bird, by putting its bill into the crack of a tree, can produce a violent sound, as if it was rending asunder, which may be heard at least one hundred and twenty yards. In some countries this bird, from the noise which it produces in the manner above stated, is called the *Loggerhead*. There are about six foreign species.

A recent writer, in *Loudon's Journal of Natural History*, gives the following amusing account of the manners of this bird:—

“ I had never seen the little bird called the Nuthatch when one day, while I was expecting the transit of some woodpigeons under a birch tree, with my gun in my hand, I observed a little ash-coloured bird squat himself on one of the large lateral trunks over my head, and, after some observation, begin to tap loudly, or rather solidly, upon the wood, and then proceed round and round the branch, it being clearly the same thing to him whether his nadir or

zenith were uppermost. I shot, and the bird fell; there was a lofty hedge between us, and when I got over he had removed himself. It was some time before I secured him; and I mention this, because the manner in which he eluded me was characteristic of his cunning. He concealed himself in holes at the bottom of a ditch, so long as he heard the noise of motion; and when all was still he would scud out and attempt to escape. A wing was broken, and I at length got hold of him. He proved small, but very fierce; and his bite would have made a child cry out. The elbow-joint of his wing being thoroughly shattered, and finding that he had no other wound, I cut off the dangling limb, and put him into a large cage with a common lark. The wound did not in the least diminish his activity, nor yet his pugnacity, for he instantly began to investigate all means of escape; he tried the bores, then tapped the wood-work of the cage, and produced a knocking sound, which made the room re-echo; but, after finding his efforts vain, he then turned upon the lark, ran under him with his gaping beak to bite, and effectually alarmed his far more gentle and elegant antagonist. Compelled to separate them, the Nuthatch—for this bird I discovered him to be by turning over the leaves of an Ornithologia—was put into a smaller cage of plain oak wood and wire. Here he remained all night; and the next morning his knocking or tapping with his beak was the first sound I heard, though sleeping in an apartment divided from the other by a landing place. He had food given to him, minced chicken and bread crumbs, and water. He ate and drank with a most perfect impudence, and, the moment he had satisfied himself, turned again to his work of battering the frame of his cage,

the sound from which, both in loudness and prolongation of noise, is only to be compared to the efforts of a fashionable footman upon a fashionable door in a fashionable square. He had a particular fancy for the extremities of the corner pillars of the cage; on these he spent his most elaborate taps; and at this moment, though he only occupied the cage a day, the wood is pierced and worn like a piece of old worm-eaten timber. He probably had an idea that if the main beams could once be penetrated, the rest of the superstructure would fall, and free him. Against the doorway he had also a particular spite, and once succeeded in opening it; and when, to interpose a farther obstacle, it was tied in a double knot with a string, the perpetual application of his beak quickly unloosed it. In ordinary cages a circular hole is left in the wire for the bird to insert his head to drink from a glass: to this hole the Nuthatch constantly repaired, not for the purpose of drinking, but to try to push out more than his head—but in vain, for he is a thick bird, and rather heavily built; but the instant he found the hole too small, he would withdraw his head, and begin to dig and hammer at the circle, where it is rooted in the wood, with his pickaxe of a beak, evidently with a design to enlarge the orifice. His labour was incessant, and he ate as largely as he worked; and, I fear, it was the united effects of both that killed him. His hammering was peculiarly laborious, for he did not peck as other birds do, but, grasping his hold with his immense feet, he turned upon them as upon a pivot, and struck with the whole weight of his body; thus assuming the appearance, with his entire form, of the head of a hammer, or, as I have sometimes seen birds in mechanical clocks made to

strike the hour by swinging on a wheel. We were in hopes that when the sun went down, he would cease from his labours, and rest; but no—at the interval of every ten minutes, up to nine or ten in the night, he resumed his knocking, and strongly reminded us of the coffin-maker's nightly and dreary occupation. It was said by one of us, 'he is nailing his own coffin;' and so it proved. An awful fluttering in the cage, now covered with a handkerchief, announced that something was wrong; and we found him at the bottom of his prison, with his feathers ruffled and nearly all turned back. He was taken out, and for some time he lingered away in convulsions, and occasional brightenings up. At length he drew his last gasp; and will it be believed that tears were shed on his demise? The fact is, that the apparent intelligence of his character, the speculation in his eye, the assiduity of his labour, and his most extraordinary fearlessness and familiarity, though coupled with fierceness, gave us a consideration for him that may appear ridiculous to those who have never so nearly observed the ways of an animal as to feel interested in its fate. With us it was different."

THE BEE-EATER

Is well known on the continent of Europe, though it has never been seen in England. It is about ten inches in length. The forehead is of a blue green; the top of the head and upper part of the back chestnut and green; the throat is yellow; and the under parts of the body blue green. Flocks of these birds are seen in Germany. It feeds chiefly upon insects, and is good food. There are about twenty different species foreign and domestic.

The INDIAN BEE-EATER is about the size of a common blackbird. Its bill is nearly two inches long, and its eyes are of a fine red; on each side of the head extends a black stroke, which begins at the corners of the mouth, and passes beyond the eyes. The base of the upper chap, and under the chin, is covered with bright pale blue feathers; the upper and back part of the head are of a dusky yellow; the back and wings of the same colour, only shaded pretty strongly with a green; the tips of the quill feathers brown, the breast and belly green; the thighs and under part near the vent, of a pale yellow, with a small green mixture. The tail consists of about twelve feathers; the outermost on each side are of a green and yellow mixture, about three inches in length; the two middlemost twice that length, ending in sharp points, of a brown or dusky colour; the legs and feet black.

They principally feed on bees, beetles, grasshoppers, and other insects. They build in hollow places or caverns five or six feet deep, and lay six or seven eggs.

THE WRYNECK

Is a beautiful bird, though its colours are of the plainest kind. It is about the size of a lark. Its plumage in general is ash-coloured, beautifully marked with black, but the breast and belly are lighter than the upper parts. Its bill is three quarters of an inch long, and the tongue is like a worm when extended, and of such length that it will twist round the bird's head. With this instrument it procures its food, which consists chiefly of ants. In England it is a bird of passage; at the end of summer it grows remarkably fat, and is on that

account confounded with the ortolan, and greatly celebrated among the connoisseurs in good eating. The young ones hiss in the nest like so many snakes, insomuch that the rustics are sometimes prevented plundering the nest, being apprehensive they are approaching the brood of that reptile.

THE CREEPER

Is the smallest of European birds, if we except the crested wren, and weighs only five drachms. The bill is hooked like a sickle. The upper part of the body is variegated with brown and black, and the breast and belly are of a silver white. This bird is very common in England, though, from its extreme agility in eluding the eye of the spectator, it is less frequently seen than other common birds. It feeds upon insects, and builds in the holes of trees. The nest is formed of grass, lined with feathers. Along the stems of trees it runs readily in every direction.

Nearly eighty species, foreign and domestic, have been enumerated of this bird. The colour of the foreign species is in general olive green. It inhabits the Sandwich Islands, and is one of the birds whose plumage the natives make use of for their feathered garments.

In this order is included a numerous list from all the tropical forests of the east and west ; that, however, which seems next to challenge our attention is the TOUCAN, a bird of the pie kind, whose bill is nearly as large as the rest of its whole body ; and the tongue of which is feathered at the edges.

Of this extraordinary bird there are about fifteen species. We shall only describe the Red-beaked

Toucan. It is about the size of and shaped like a jackdaw, with a large head to support its monstrous



bill; this bill, from the angles of the mouth to its point, is six inches and a half; and its breadth in the thickest part is a little more than two. Its thickness near the head is one inch and a quarter; and it is a little rounded along the upper chap, the under side being rounded also; the whole of the bill extremely slight, and a little thicker than parchment. The upper chap is of a bright yellow, except on each side, which is of a fine scarlet colour; as is also the lower chap, except at the base, which is purple. Between the head and the bill there is a black line of separation all round the base of the bill; in the upper part of which the nostrils are placed, and are almost covered with feathers, which has occasioned some writers to say, that the Toucan has no nostrils. Round the eyes, on each side of the head, is a space of bluish skin, void of feathers, above which the head is black, except a white spot on each side joining to the base of the upper chap. The hinder part of the neck, the back, wings, tail, belly, and

thighs, are black. The underside of the head, throat, and the beginning of the breast, are white. Between the white on the breast, and the black on the belly, is a space of red feathers, in the form of a new moon, with its horns upwards. The legs, feet, and claws, are of an ash colour; and the toes stand like those of parrots, two before, and two behind.

This bird is easily tamed, and will become very familiar, and eat almost any thing offered to it; in general it feeds on fruits. In its wild state it is a noisy bird, and is perpetually moving from place to place, in quest of food, going northward or southward, as the fruits ripen. Grapes, however, seem to be one of its most favourite articles of food. If these are plucked from the stalk, one by one, and thrown to it, the Toucan will catch them with great dexterity before they fall to the ground.

These birds when in flocks, on retiring to rest, generally appoint one to watch during the night. While they are asleep he sits perched at the top of a tree, above them, and makes a continual noise, resembling ill articulated sounds, moving also his head, during the whole time, to the right and left. For this reason the South Americans give to the Toucan the name of Preacher Toucan.

The Toucan builds its nest in the holes of trees, that are either formed by itself, or that from accident it meets with, and lays two eggs; and no bird better secures its young from external injury. It has not only birds, men, and serpents to guard against, but a numerous train of monkeys, still more prying, mischievous, and hungry, than all the rest. The Toucan, however, sits in its hole, defending the entrance with its great beak; and if the monkey venture to offer a visit of curiosity, the Toucan gives

him such a welcome, that he is soon glad to make his escape.

This bird is a native of Guiana and Brazil, and is said to be in great request in South America ; both from the delicacy of its flesh, and on account of the beauty of its plumage, particularly the feathers of the breast. The skin of this part the Indians pluck off, and, when dry, glue to their cheeks, and this they consider as an irresistible addition to their beauty.

THE MOMOT

Is a bird which has some resemblance to the Toucan, but is of a different genus. It is an inhabitant of Mexico and South America, and lives on insects.

THE HORNBILL.

NEARLY allied to the Toucan is the Hornbill, by some called the *calao*, or *Indian Raven*. It indeed seems to hold the same place in the warm climates of the old continent as the Toucan does in the new. The distinguished characteristic of this genus is an immense bending bill, with frequently a large protuberance in the upper part of it resembling an additional bill.

The RHINOCEROS HORNBILL, or RHINOCEROS bird, is nearly as large as a turkey ; the bill is ten inches long, and two and a half thick at the base. On the upper part is an appendage as large as the bill itself, and turning upwards, which measures eight inches in height. There is nothing else remarkable in the bird, as the general colour of the plumage is black. This bird is found in most parts of the East Indies, where (like the Raven) it feeds upon carrion. It is

said to chase rats and mice, and, after pressing them flat with its bill in a peculiar manner, toss them up in the air, and swallow them whole on their descent.

The **HELMET HORNBILL** is remarkable for having the same prominence of a conical form; and in the *Philippine* Isles there is a species, the horn of which reaches backwards beyond the eyes, ending in two angular points, which produce the effect of a bird with two horns.

Of the **PIED HORNBILL**, or calao of Malabar; the circumstance which distinguishes it from the rest of its kind, is, that the breast, belly, and a part of the wings are white; the remainder of the body is, like the rest of these animals, black.

There are about twelve species of this bird in all, one of which is white.

THE PARROT,



WHICH is said to have been first introduced into Europe by Alexander the Great, is the best known among us of all foreign birds, as it unites the greatest beauty with the greatest docility. But its chief attraction is to be found in its ability to utter articulate

sounds, a gift which it possesses in far greater perfection than any other bird. Its voice also is more like a man's than any other; the raven is too hoarse, and the jay and magpie too shrill to resemble the truth: but the Parrot's note is of the true pitch, and capable of a variety of modulations. For this it is indebted to the form of its bill, tongue, and head. "Its bill, round on the outside and hollow within, has in some degree the capacity of a mouth, and allows the tongue to play freely; and the sound, striking against the circular border of the lower mandible, is there modified as on a row of teeth, while the concavity of the upper mandible reflects it like a palate: hence the animal does not utter a whistling sound, but a full articulation. The tongue, which modulates all sounds, is proportionably larger than in man; and would be more voluble, were it not harder than flesh, and invested with a strong horny membrane." In addition to the talent of speech, the parrot is endowed with a strong memory, and with more sagacity than is the lot of most other birds.

The ease with which this bird is taught to speak, and the great number of words which it is capable of repeating, are equally surprising. We are assured, by a grave writer, that one of these was taught to repeat a whole sonnet from Petrarch; and "that I may not be wanting in my instance," says a late writer, "I have seen a parrot, belonging to a distiller, who had suffered pretty largely in his circumstances from an informer who lived opposite him, very ridiculously employed. This bird was taught to pronounce the ninth commandment, *Thou shalt not bear false witness against thy neighbour*, with a very clear, loud, articulate voice. The bird was generally placed in its cage over against the informer's house, and

delighted the whole neighbourhood with its persevering exhortations."

Willoughby tells a story of a parrot, which is not so dull as those usually brought up when this bird's facility of talking happens to be the subject. A parrot belonging to King Henry the Seventh, who then resided at Westminster, in his palace by the river Thames, had learned to talk many words from the passengers as they happened to take water. One day, sporting on its perch, the poor bird fell into the water, at the same time crying out, as loud as he could, *A boat, twenty pound for a boat.* A waterman, who happened to be near, hearing the cry, made to the place where the parrot was floating, and taking him up, restored him to the king. As it seems the bird was a favourite, the man insisted that he ought to have a reward rather equal to his services than his trouble; and, as the parrot had cried twenty pounds, he said the king was bound in honour to grant it. The king at last agreed to leave it to the parrot's own determination, which the bird hearing, cried out, *Give the knave a groat."*



Those who usually bring these birds over are content to make three or four distinctions. The large kind, which are the size of a raven, are called

Macaws; the next size are simply called Parrots; those which are entirely white are called Lories; and the lesser size of all are called Parroquets, or Parrakeets. The difference between even these is rather in the size than in any other peculiar conformation, as they are all formed alike, having toes two before and two behind for climbing and holding; strong hooked bills for breaking open nuts, and other hard substances, on which they feed; and loud harsh voices, by which they fill their native woods with clamour.

The bill is fashioned with peculiarities; for the upper chap, as well as the lower, are both moveable. In most other birds the upper chap is connected, and makes but one piece with the skull; but in these, and in one or two species of the feathered tribe more, the upper chap is connected to the bone of the head by a strong membrane, placed on each side, that lifts and depresses it at pleasure. By this contrivance they can open their bills the wider; which is not a little useful, as the upper chap is so hooked and so overhanging, that, if the lower chap only had motion, they could scarcely gape sufficiently to take any thing in for their nourishment.

The Parrot, though common enough in Europe, will not, however, breed here. The climate is too cold for its warm constitution; and though it bears our winter when arrived at maturity, yet it always seems sensible of its rigour, and loses both its spirits and appetite during the colder part of the season.

The sagacity, which Parrots show in a domestic state, seems also natural to them in their native residence among the woods. They live together in flocks, and mutually assist each other against other animals, either by their courage or their notes of warning. They generally breed in hollow trees,

where they make a round hole, and do not line their nest within. If they find any part of a tree beginning to rot from the breaking off of a branch, or any such accident, this they take care to scoop, and to make the hole sufficiently wide and convenient; but it sometimes happens that they are content with the hole which a woodpecker has wrought out with greater ease before them; and in this they prepare to hatch and bring up their young. The female lays two or three eggs, about the size of those of a pigeon, and marked with little specks. The natives are very assiduous in seeking their nests, and usually take them by cutting down the tree. By this means, indeed, the young Parrots are liable to be killed; but if one of them survive, it is considered as a sufficient recompense. The old ones are shot with heavy arrows headed with cotton, which knock them down without killing them. The food commonly given to these birds consists of hemp seed, nuts, fruits of every kind, and bread soaked in wine; they would prefer meat, but that kind of aliment has been found to make them dull and heavy, and to cause their feathers to drop off after some time. It has been observed that they keep their food in a kind of pouch, from which they afterwards throw it up in the same manner as ruminating animals.

The **HORNED PARROT** is a bird of singular beauty and elegance. It is about the size of a small dove. The bill is bluish at the base, and black at the tip. The sides of the head are orange. From the crown spring two slender dusky feathers, about an inch and a half long and tipped with crimson. The hind part of the neck and rump are yellow, the rest of the body is green except the ends of the wings and the tail, which are blue. It is an inhabitant of New *Caledonia*.

Latham enumerates near a hundred and fifty different species of this bird. The Macaw is the largest species, some being as large as a capon; the common Parrot holds the middle rank, and the Lory and the Parroquets are the smallest, some of them not exceeding the size of a common sparrow.

THE DEEP BLUE MACAW.



THE Macaws are characterized by their very broad and powerful beaks; the nakedness of the face, sometimes quite bare, at other times partially covered with lines of short and scattered feathers; and the tail, which surpasses the body in length, is regularly graduated and terminates in an acute apex. All of them are natives of America, inhabit the tropical regions, and are remarkable for their vivid colouring. They subsist on fruits and seeds. Of the latter, they prefer such as have a hard and shelly covering, and from these they extract the contents very skilfully.

The Macaw, which is the subject of the cut, inhabits Brazil. It is entirely of a deep and brilliant blue colour; with black back, legs, and claws. Round each of the eyes is a naked circle of bright yellow, and the cere is of the same hue. A specimen which is in the Tower measures two feet four inches from the top of the head to the extremity of the tail. Its upper mandible is five inches long; its lower is two.

THE BLUE AND YELLOW MACAW.



THIS is one of the finest of the Macaws. A plumage of the most beautiful azure covers the whole of its upper surface; on the under part the feathers are of a splendid yellow. The cheeks are white, slightly tinged with flesh colour, and the naked part is adorned with three lines of minute blackish feathers. Round the throat is a broad collar of greenish black; and the forehead is of a yellowish green.

THE PARROQUET.



THIS bird has a longer tail than the common Parrot, and is less in size. It also speaks with less facility, and is even more easily tamed. The handsomest species is the RING PARROQUET, which has a red circle encompassing the back of the neck, and ending under the lower chap of the bill. Its head and body are green, but of a fainter hue on the neck, breast, and whole of the under side; the belly being of so slight a green as to seem almost yellow.

The Parroquet tribe in Brazil are most beautiful in their plumage, and the most talkative birds in nature. They are very tame, and appear fond of mankind; they seem pleased with holding parley with him; and while he continues to talk, answer him, and appear resolved to have the last word. The fowler walks into the woods, where they keep in abundance; but as they are green, and exactly the colour of the leaves among which they sit, he only hears their prattle, without being able to see a single bird; he looks round him, sensible that his game is within gunshot in abundance; but is mortified to the last degree that it is impossible to see them. Unfortunately for these, however, as soon as

they have stripped the tree on which they sate of all its berries, some one of them flies off to another; and, if that be found fit for the purpose, it gives a loud call, which all the rest resort to. That is the opportunity the fowler has long been waiting for, he fires in among the flock while they are yet on the wing: and he seldom fails of bringing down a part of them. But it is singular enough to see them when they find their companions fallen. They set up a loud outcry, as if they were chiding their destroyer, and do not cease till they see him preparing for a second charge.

THE COCKATOO.



Of the Cockatoo, or crested Parrot, there are several species, but they chiefly differ in their plumage. It is distinguished from the parrot by its head being adorned with a crest of long feathers, which is capable of being erected and lowered at will, and gives the bird a strikingly fine appearance. It is a native of the Molucca Islands and other parts of the East Indies, where it is frequently known to build on the tops of houses. Like the rest of the parrot kind, it is capable of uttering sea phrases and sentences,

with equal propriety of tone and volubility. It derives its name from its frequent repetition of the syllables Cockatoo. It delights in damp and marshy situations, and usually dwells near rivers or brooks, where it indulges in frequent bathing. In bathing, indeed, it feels a particular pleasure, even when a captive. Vegetable substances, chiefly seeds, supply its food, in the wild state. When domesticated it lives on hemp seed, the outer covering of which it detaches with much dexterity. Of pastry and sweetmeats it is very fond.

THE YELLOW CRESTED COCKATOO.



THIS bird is throughout of a pure white, except its crest, of which the longer feathers are bright yellow; and also the under surface of the wings and tail, which are of a straw colour. The cheeks, likewise,

are sometimes of the latter hue. The beak is nearly black. This species is remarkably intelligent, and becomes attached to those who treat it with kindness.



THE ANI.

OF the ANI there is about three species. Their bill resembles in a great measure that of the parrot. The *greater Ani* is the size of a jay, the *lesser* about the size of a blackbird. The latter picks out the acarus ricinus from the backs of cattle when they are infested with it, for which purpose it is said that they will lie down spontaneously. The general colour of their plumage is black. They are gregarious birds, inhabiting the West India islands, and may be made to talk like parrots.

THE WATTLE BIRD.

THE WATTLE BIRD is a native of New Zealand. It is about the size of a jay, of an ash colour, and is peculiarly distinguished by the wattles which grow under the bill like those of a cock. The flesh is eatable.

THE GRACKLE.

OF the GRACKLE there are about eleven species inhabiting America and the tropical climates, some of them the size of a magpie, others about that of a blackbird. Their general plumage is black. They live on maize, fruits, and insects; but one species in the Philippine islands, which is called from its resemblance to the next genus, and from its beauty, the PARADISE GRACKLE, is remarkable for its being an extraordinary destroyer of grasshoppers. The inhabitants of the Isle of Bourbon, being greatly infested with that insect, imported a pair of these birds, which presently relieved them from that pest. In process of time however the Grackles became very numerous, and the inhabitants thinking them injurious, proscribed them by an edict, on which the grasshoppers increased so fast upon them, that they were obliged to send for more, which presently dispatched every grasshopper in the island.

The BOAT-TAILED GRACKLE from Jamaica has its plumage black, but it is remarkable for the feathers of its tail forming a hollow like a boat on the upper surface, so that it may be compared to a hen's tail with the underside turned uppermost. It is the size of a cuckoo.

THE BIRD OF PARADISE.

THIS bird has been more celebrated for the false and imaginary qualities which are attributed to it, than for its real and truly remarkable properties. It has been reported of it, that the egg is produced in the air by the female, and hatched by the male in an

orifice of its body ; that it never touches the ground ; that it has no legs ; that it hangs itself by the two long feathers to a tree when sleeping ; and that it



is naturally without legs, and subsists entirely upon vapours and dew ; with a variety of other assertions, equally false and equally ridiculous. There are about eight different species of these birds ; but that which is best known is the *greater PARADISE BIRD*, which appears to the eye of the size nearly of a pigeon, though in reality the body is not much larger than that of a thrush. The tail, which is about six inches, is as long as the body ; the wings are large compared with the bird's other dimensions. The head, the throat, and the neck are of a pale gold colour. The base of the bill is surrounded by black feathers, as also the side of the head and throat, as soft as velvet, and changeable like those of the neck of a mallard. The hinder part of the head is of a shining green, mixed with gold. The body and wings are chiefly covered with beautiful brown,

purple, and gold feathers. The uppermost part of the tail feathers is of a pale yellow, and those beneath are white and longer than the former; for which reason the hinder part of the tail appears to be all white. But what chiefly excites curiosity are two long naked feathers, which spring from the upper part of the rump above the tail, and which are usually about two feet long. These are bearded only at the beginning and the end; the whole shaft for about one foot nine inches being of a deep black, while the feathered extremity is of a changeable colour, like the mallard's neck.

This bird is a native of the Molucca Islands, but found in greatest numbers in that of Arou. The inhabitants are not insensible of the pleasure they afford, and give them the name of God's birds, as being superior to all that he has made. They live in large flocks, and at night generally perch upon the same tree. They are called by some, the Swallows of Ternate, from their rapid flight, and from their being continually on the wing in pursuit of insects, their usual prey.

As the country where they are bred has its tempestuous season, when rains and thunders continually disturb the atmosphere, these birds are then but seldom seen. The natives, who make a trade of killing and selling these birds to the Europeans, generally conceal themselves in the trees where they resort, and having covered themselves up from sight in a bower made of the branches, they shoot at the birds with reedy arrows; and, as they assert, if they happen to kill the king, they then have a good chance for killing the greatest part of the flock. The chief mark by which they know the king is by the ends of

the feathers in his tail, which have eyes like those of a Peacock. When they have taken a number of these birds their usual method is to gut them and cut off their legs¹; they then run a hot iron into the body, which dries up the internal moisture; and filling the cavity with salts and spices, they sell them to the Europeans for a perfect trifle.

The KING BIRD OF PARADISE is about the size of a lark. The upper parts of the plumage are of a bright red, and the breast is a blood red colour with a broad green bar. The wing feathers are a little mottled with white and green, and the whole plumage has a fine gloss like satin. The tail is remarkably short, and from it springs two naked feathers like those in the former species, except that they coil in a spiral manner at the end. It is supposed to breed in New Guinea, where there is also a species the predominant colour of which is black.

The MAGNIFICENT BIRD OF PARADISE is superior to all the preceding in the beauty of its plumage. It is the size of a blackbird. The crown of the head is a deep chestnut. At the back part of the neck a tuft of yellowish feathers arises, each of which is marked near the tip with a black spot; beneath these springs another tuft still larger and of a straw colour. The back and tail are of a bright red brown. Down the middle of the throat, neck, and breast, the colour is blue green, which is encircled by a gorget (as it were) of black with a green shade. The long fea-

¹ This has given rise to the ridiculous fable above quoted; and the reason of this operation is that the birds are used in that country as aigrettes, and for other ornaments of dress; and that being the case, it is usual to cut off the useless and less brilliant parts.

thers from the tail are without tufts at the end, but are furnished with very short green webs on one side. Besides these there is the GORGET BIRD OF PARADISE, and some other species of less note.

THE BEEFEATER

Is about eight inches and a half long. The upper part of its plumage is light brown, and its breast a dirty yellow. It has a strong and thick bill, with which it picks the worms and other insects which are enclosed under the skin on the backs of the oxen, whence it derives its name. It is a native of Senegal.

THE CURUCUI.

Of the Curucui there are about seven species, most of them inhabitants of South America. They are beautiful birds, the plumage of some of them being ash coloured, and of others reddish, finely varied with white, &c. The RED-BELLIED CURUCUI is of a green colour on the back, wings, &c. and the lower parts of a fine red. The whole genus is distinguished by having the nostrils covered with thick bristles. They are mostly of the size of a blackbird.

THE BARBET.

THE Barbets are described as a dull stupid race of birds, inhabiting the tropical climates. They probably take their name from the strong bristles which surround the bill. They are in general larger than a lark, and vary greatly in plumage, being black, green, reddish, pied, &c.

THE JACAMAR

Is a beautiful bird. The general colour of its plumage is green, and in its habits and form it bears a considerable resemblance to the kingfisher. There are three or four species of this bird, all of them inhabitants of South America.

THE TODY

Is a small bird which bears considerable relation to the flycatchers. Latham reckons about fourteen species, all inhabiting the warmer climate of America. They are green, ash coloured, blue, brown, and pied, and seldom are found to exceed the size of a wren.

THE HUMMING-BIRD.



OF this charming little animal there are not less than sixty species, from the size of a small wren down to that of a bee. An European could never have supposed a bird existing so very small, and yet completely furnished with a bill, feathers, wings, and intestines, exactly resembling those of the largest kind. A bird not so big as the end of one's little finger, would probably be supposed but a creature

of imagination, were it not seen in infinite numbers, and as frequent as butterflies in a summer's day, sporting in the fields of America, from flower to flower, and extracting their sweets with its little bill.

The smallest Humming-bird is about the size of a bee, and weighs no more than twenty grains. The feathers on its wings and tail are violet brown, but those on its body, and under its wings, are of a greenish brown; with a fine red cast or gloss, which no silk or velvet can imitate. The bill is black, straight, slender, and of the length of three lines and a half.

The RUBY-CRESTED HUMMING-BIRD is larger than the preceding. Its throat is like burnished gold glossed with emeralds; and it has a small crest on its head, green at the bottom, and as it were gilded at the top; and which sparkles in the sun like a little star in the middle of its forehead.

The GARNET-THROATED HUMMING-BIRD is four inches and a quarter long. It has a hooked bill about an inch long, the head, neck, back, &c. dark green, and the throat a fine garnet, appearing glossy in some directions.

The GOLD-THROATED HUMMING-BIRD is about half as big as the common wren, and without a crest on its head; but to make amends, it is covered, from the throat half way down the belly, with changeable crimson coloured feathers, which in different lights change to a variety of beautiful colours, much like an opal. The RUBY-NECKED is however the most beautiful of all the species. It is about the size of the preceding. The upper parts of the body are brown, with a mixture of green gold, and the throat like the finest topaz. There are, in a word, of almost

all colours of these beautiful animals, crimson, green, emerald, white breasted, and spotted. Some of them with and some without crests. The eyes of most of them are very small, and as black as jet.

It is inconceivable how much these add to the high finishing and beauty of a rich luxurious western landscape. As soon as the sun is risen, the Humming-birds, of different kinds, are seen fluttering about the flowers, without even lighting upon them. Their wings are in such rapid motion, that it is impossible to discern their colours, except by their glittering. They are never still, but continually in motion, visiting flower after flower, and extracting its honey. For this purpose they are furnished with a forked tongue, that enters the cup of the flower, and extracts its nectared tribute. Upon this alone they subsist. The rapid motion of their wings brings out a humming sound, whence they have their name.

The nests of these birds are not less curious than the rest: they are suspended in the air, at the point of the twigs of an orange, a pomegranate, or a citron tree; sometimes even in houses, if they find a small and convenient twig for the purpose. The female is the architect, while the male goes in quest of materials; such as cotton, fine moss, and the fibres of vegetables. The nest is about the size of a hen's egg cut in two. They lay two eggs at a time, and never more, about the size of small peas, and as white as snow, with here and there a yellow speck. The time of incubation continues twelve days; at the end of which the young ones appear, and are much about the size of a bluebottle fly.

It is a doubt whether or not these birds have a continued note in singing. All travellers agree that,

beside the humming noise produced by their wings, they have a little interrupted cherup; but Labat asserts, that they have a most pleasing melancholy melody in their voices, though small and proportioned to the organs which produce it. It is very probable that, in different places, their notes are also different; and as there are some that continue torpid all the winter, there may likewise be some with agreeable voices, though the rest may in general be silent.

Small as the Humming-bird is, it has great courage and violent passions. If it find that a flower has been deprived of its honey, it will pluck it off, throw it on the ground, and sometimes tear it to pieces; and it often fights with a desperate fury which is astonishing in a creature of such diminutive size. It will even allow a man to come within two yards of it before it will take to flight. Humming-birds are caught by blowing water on them from a tube, or shooting at them with sand.

CHAP. IV.

Of Birds of the Passerine, or Sparrow Order...The STARE...The THRUSH...The Thrush...The Missel Thrush...The Redwing...The Fieldfare...The Blackbird...The Ring Ouzel...The Water Ouzel...The Rose-coloured Ouzel...The Blue and Solitary Thrushes...The Mock Bird...The CHATTERER...The Bohemian and Carunculated Chatterer...The GROSBEEK...The Hawfinch...The Pine Grosbeak...The Cross-bill...The Bulfinch...The Yellowhammer...The Reed Sparrow...The BUNTING Genus...The Tawny Bunting...The Ortolan...The Black-throated Bunting...The FINCHES...The Sparrow...The Goldfinch...The Linnet...The Canary Bird...The Twite...The FLYCATCHER...The Fan-tailed Flycatcher...The LARK Genus...The WAGTAIL...The White, Yellow, and Gray Wagtail...The WARBLERS...The Nightingale...The Redbreast...The Redstart...The Blackcap...The Wren...The Hedge Sparrow...The Wheat-ear...The Whinchat...The Stonechatter...The Whitethroat...The Thorn-tailed Warbler...The TITMOUSE...The SWALLOW...The Swift...The Martin...The GOATSUCKER...The COLY...The TANAGER...The MANAKIN.

The Passerine, or Sparrow Order.

THE STARE,

OR STARLING.

THERE are few birds better known in these temperate climates than that under our consideration. It has a nearer relation with the blackbird than with any other; but it is distinguished from that genus by the glossy green of its feathers, in some lights, and the purple in others. It breeds in hollow trees, the eaves of houses, towers, ruins, cliffs, and often in high rocks over the sea. It lays four or five eggs, of a pale greenish ash colour, and makes its nest of straw, small fibres of roots, &c. Its voice is rough;

but what it wants in the melody of note, it compensates by the facility with which it is taught to speak. So fond is it of society, that it will join not only its own kind, but will also associate with redwings and fieldfares, and even with owls, jackdaws, and pigeons. In the winter season these birds fly in large flocks, and may be known at a great distance by their whirling mode of flight. M. de Buffon compares it to a sort of vortex, in which the whole collective body performs a uniformly circular revolution, yet progressively advances at the same time.



The principal food of Starlings is snails, worms, and insects; but they will eat grain, seeds, and fruit, and are said to be exceedingly fond of cherries. When confined, they will eat raw flesh cut small, or bread soaked in water. They are accused, we know not how truly, of getting into pigeon houses, to suck the eggs, and it is certain that they do great damage in Lincolnshire, by roosting in myriads on the reeds, which are used for thatching in that country, and which they break down by their weight.

Of the Stare there are about thirteen species, foreign and domestic. There have been found varieties of the common Stare, white, black, and pied.

At New Zealand is a species distinguished by wattles, like those of a cock: at the Cape of Good Hope they are found with combs; and in China there is a species of a beautiful green.

THE THRUSH.

OF the Thrush there are no less than one hundred and thirty species, foreign and domestic.

THE SONG THRUSH, OR THROSTLE,



Is about eleven inches in length. The bill is dusky, the base of the lower bill yellow; the eyes are hazel; the head, back, and lesser coverts of the wings are of a deep olive brown, the latter tipped with white; the lower part of the back and rump are tinged with yellow; the cheeks are of a yellowish white, spotted with brown, as are also the breast and belly, which are marked with larger spots of a dark brown colour; the quills are brown with pale edges; the tail feathers the same, the three outermost tipped with white; the legs are yellow; the claws black.

It begins to sing very early, often on the turn of the year in blowing showery weather, whence in some places it is called the Storm Cock, and its song

is heard during nine months. Its note of anger is very loud and harsh, between a chatter and a shriek, which accounts for some of its names. Its usual strain, however, is among the sweetest of the grove, and is often kept up for hours without cessation. When brought up from the nest with the woodlark or the nightingale, it will adopt their song. It subsists on various sorts of berries, and likewise on caterpillars and several kinds of insects, with which it also feeds its young.

This bird is found in various parts of Europe, and is said to be migratory in some places, but continues in England the whole year, and frequently has two broods. It builds in woods or orchards, and not seldom in thick hedges near the ground. Fine and soft moss, interwoven with dried grass or hay, forms the outside of the nest, and the inside is curiously plastered with cow dung. In some districts of Poland, Thrushes are caught in such numbers that the inhabitants export them in ship loads.

THE MISSEL THRUSH

Is distinguished from all of the kind by its superior size, being much larger than any of them, viz. eleven inches in length, and weighing near five ounces. It differs scarcely in any other respect from the thristle, except that the spots on the breast are larger. It builds its nest in bushes, or on the side of some tree, as all of this kind are found to do, and lays four or five eggs in a season. Its song, which it begins in spring, sitting on the summit of a high tree, is not, however, so fine as that of the thristle. It is the largest bird of all the feathered tribe that has music in its voice; the note of all greater birds being either

screaming, chattering, or croaking. It feeds on insects, holly and missletoe berries; and sometimes sends forth a very disagreeable scream when frightened or disturbed. It is very common in England. While breeding, it is fierce and pugnacious, driving with great fury to a distance all birds that approach its nest. No jay, magpie, or blackbird must enter the garden which is his haunt.

THE REDWING



Is somewhat less than the thrush, and its plumage in general is similar to that of the thrush, but a white streak over the eye distinguishes it from that bird; the belly is likewise not quite so much spotted, and the sides of the body and the feathers under the wings are tinged with orange red, which is its peculiar characteristic; whence also it derives its name. The bill is of a dark brown colour, and the eyes are of a deep hazel. These birds make their appearance a few days earlier than the fieldfares. When birds come to suffer by severe frost, the Redwing is the first that perishes. The song thrush is the next.

THE FIELDFARE



Is known by his yellowish bill, by the dark colour of his legs, and by his head being ash colour, spotted with black. With us they are insipid, tuneless birds, flying in flocks, and excessively watchful to preserve the general safety. All their season of music and pleasure is employed in the more northern climates, where they sing most delightfully, perched among the forests of maples, with which those countries abound.

The Fieldfare is only a visitant in England, making its appearance about the beginning of October, in order to avoid the rigorous winters of the north, whence it sometimes comes in great flocks, according to the severity of the season, and leaves us about the latter end of February, or the beginning of March, and retires to Russia, Sweden, Norway, and as far as Siberia and Kamtschatka. They breed in Sweden and Norway. They build their nests in high trees, and sit on trees during the day, but always roost on the ground. During the winter they feed on haws and other berries; they likewise eat worms, snails, and slugs.

Fieldfares are sometimes seen singly, but in general form very numerous flocks, and fly in a body: and though they often spread themselves through the fields in search of food, they seldom lose sight of each other, but, when alarmed, fly off, and collect together upon the same tree.

There is reason, says Mr. Bingley, to suppose that the flocks of these birds keep a kind of watch to remark and announce the appearance of danger. On any person approaching a tree that is covered with them, they continue fearless, till one at the extremity of the bush, rising on its wings gives a loud and peculiar note of alarm. They then all fly away, except one other, which continues till the person approaches still nearer, to certify as it were the reality of the danger, and afterwards he also flies off, repeating the note of alarm.

The Roman epicures held these birds in such esteem, that they fattened them with crumbs of bread mixed with minced figs, and their flesh is still esteemed a delicacy.

THE BLACKBIRD, OR OUZEL,



Is about the size of ten inches. At its full growth it is of a fine deep black, and the bill is of a bright yellow. The female is generally brown; and varie-

ties are found of them both white and pied, particularly in cold countries. It plasters its nest, which is commonly in the stump of a hawthorn, in the inside with clay, and lays about four or five bluish eggs. It is a solitary bird, fond of sequestered woods and retired situations. It feeds on worms, snails, and insects; and gets at the snails by dashing the shells against a stone.

THE RING OUZEL



IN size rather exceeds the blackbird. It appears of a dull black, and on the breast is a patch of white, passing a little backwards like a collar. They generally build near streams, and are birds of passage in all the southern parts of Europe. Their food consists of insects and berries of various kinds, and they are very fond of grapes.

Nearly allied to this last is the WATER OUZEL. It is rather less than a blackbird. The upper parts of the body have more of a brownish cast than in the former bird. It does not go in flocks like the ring ouzel, but lives chiefly in the neighbourhood of streams, and particularly such as take their course among rocks. It dives after small fishes, and even runs after them at the bottom of the stream as on land.

The ROSE-COLOURED OUZEL is the size of the starling. The feathers of its head are long, and form a crest. The upper parts of the body are black, with glosses of blue, purple, and green; the lower parts of the body are of a pale rose colour. This bird is common in many parts of Europe and Asia, but is very scarce in England.

The BLUE and SOLITARY THRUSHES form two species nearly resembling in habits and in manners. Their plumage is in general blue, though the latter has a cast of brown. It is not uncommon in France and Italy, where it chooses the most frightful precipices for its residence, whence it probably receives its name. As it is rarely caught, it is in high estimation even in the countries where it breeds, but still more valuable when carried from home. It not only whistles in the most delightful manner, but speaks with an articulate distinct voice. It is so docile, and observes all things with such diligence, that, though waked at midnight by any of the family, it will speak and whistle at the word of command.

To this tribe might be added an immense list of foreign birds of the Thrush kind, and living like them upon fruit and berries. Words could not afford variety enough to describe all the beautiful tints that adorn some of them. The brilliant green of the emerald, the flaming red of the ruby, the purple of the amethyst, or the bright blue of the sapphire, could not by the most artful combination show any thing so truly lively or delightful to the sight as the feathers of the Chilcoqui or the Tautotol. Passing, therefore, over these beautiful, but little known birds, we shall only mention the American MIMIC THRUSH, or MOCK BIRD. It is but a plain bird to the eye, about the size of a thrush, of a

uniform gray colour, and a reddish bill. It is possessed not only of its own natural notes, which are musical and solemn, but it can assume the tone of every other animal in the wood, from the wolf to the raven. It seems even to sport itself in leading them astray. It will at one time allure the lesser birds with the call of their males, and then terrify them, when they have come near, with the screams of the eagle. The Mock Bird, however, pleases most when it is most itself. At those times it usually frequents the houses of the American planters; and, sitting all night on the chimney-top, pours forth the sweetest and the most various notes of any bird whatever. It would seem, if accounts be true, that the deficiency of most other song birds in that country is made up by this bird alone. They often build their nests in the fruit trees about houses, and are easily rendered domestic.

THE CHATTERERS

FORM a very beautiful race of birds, including about ten species. That which is called the WAXEN, or BOHEMIAN CHATTERER, is the size of a large lark, eight inches. Its head is adorned with a beautiful pointed crest. The upper parts of the body are of a reddish ash colour; the breast and belly of a pale, purplish chestnut; a black streak passes over each eye; the chin also and quills are black. Their native country is Bohemia, whence they wander in flocks all over Europe, and were formerly superstitiously considered as a presage of a pestilence. They are seldom seen in the south parts of Britain.

The CARUNCULATED CHATTERER is a native of

Cayenne and Brazil. It is about twelve inches long. The plumage of the male is of a pure white, except a tinge of yellow on the rump, quills, and tail. The female has the upper parts of the plumage olive gray, and the lower parts gray, edged with olive. Both have a fleshy caruncle at the base of the bill, which projects over it like that of a turkey cock. Their voice is (like that of all the kind) noisy and garrulous, and so loud, that it may be heard at the distance of half a league.

THE GROSBEAKS

FORM a very extensive genus of birds, including nearly one hundred species, of which, however, not more than five are common in Europe, viz. the Hawfinch, the Pine Grosbeak, the Crossbill, the Bullfinch, and the Green Grosbeak, or Greenfinch. Their common character is a short, thick bill, and a tongue as if cut off at the end.

The first of these, the HAWFINCH, visits England at uncertain times. It is in length six inches and three quarters. The chin is black; the neck ash colour, the body brown, with the greater quill feathers black, and the under parts of the body of a dirty flesh colour.

The PINE GROSBEAK is quite the size of the bullfinch. The head, neck, breast, and rump are crimson; the back and wing coverts black. It frequents the pine forests in all the northern parts of Europe.

The CROSSBILL is too curious a bird to be overlooked. It is common in all the northern kingdoms of Europe, and sometimes visits England. Besides the singularity of its bill, it is remarked for varying its colours. The males, which are red, alter some-

times to orange; the females, which are green, to different shades of the same colour. It is about the size of a lark. Notwithstanding the seeming awkwardness of their beaks, they are able, by bringing the mandibles point to point, even to pick up and



eat the smallest seeds. They live principally on the seeds contained in fir or pine cones, and they extract them with wondrous dexterity. While they are thus engaged, they are so absorbed in what they are about, that they will often suffer themselves to be caught with horse hair nooses fixed to a fishing-rod. They are said to divide an apple with one stroke of the bill to get at the contents.

This bird, when kept in a cage, has all the actions of a parrot, climbing, by means of his crooked bill, from the lower to the upper bars. He is also very mischievous, and will destroy things merely for amusement.

THE BULLFINCH

Is a very common but handsome bird. When at its full growth it measures, from the point of the bill to the end of the tail six inches, of which the tail is two. It has a short black bill, very strong and crooked, the upper part hanging over the under, like that of

a hawk; the tongue is short, and the eyes of a hazel colour; the head and neck in proportion to the body are larger than in the generality of small birds, from which, most probably, they derived their name.



In some places they are called Ropes; in others, Thick-bills, and in some Red-hoops, or Tony-hoops, probably from their wild hooping kind of note.

The Bullfinch makes its nest of an ordinary mean fabric, in bushes, in which the female lays four or five eggs of a bluish colour, with dark brown and reddish spots. The nest so closely resembles the surrounding foliage in colour that it is not easily to be discovered. In the summer it mostly frequents woods, and the more retired places; but in winter it approaches gardens and orchards, where in spring it makes great havoc among the buds of trees. It is probable, however, that it attacks the buds for the sake of the included insects.

The cock is in size equal to the hen, but has a flatter crown, and excels her in the beauty of his colours. In a state of nature this bird has but three cries, all of which are unpleasant: but if man deigns to instruct it methodically, and accustoms it to fine, mellower, and more lengthened strains, it will listen

with attention ; and the docile bird, whether male or female, without relinquishing its native airs, will imitate exactly, and sometimes even surpass, its master. It also learns to articulate words and sentences.

THE GREENFINCH

Is also well known, being about the size and shape of the bullfinch, and of a yellowish green. This bird is so easily tamed, that it will eat out of the hand five minutes after it is taken. To produce this effect, no more is necessary than to take it into the dark and put it on your finger, to which the bird will cautiously adhere ; as it does not know whither to fly, you may then introduce the finger of the other hand under its breast, upon which it will climb, and, not finding any disposition to hurt it, will presently become tame and familiar.

Among the foreign birds of this genus is that beautiful little animal, so well known for its red bill and elegant plumage, which generally goes under the name of the JAVA SPARROW. The SPOTTED GROSBEAK is a native of New England. Besides these we may mention the CARDINAL, the GRENA-DIER, the ABYSSINIAN and PHILIPPINE, the BENGAL, and the SOCIABLE GROSBEAK. The first of these lays up in summer its winter provision of corn ; the second is remarkable for its beautiful scarlet colour ; the third and fourth construct nests unassailable by the monkey, and undamageable by the rain ; the fifth will fetch and carry like a dog ; and the sixth is a bird which lives in societies of from eight hundred to a thousand, all under what may be denominated one roof.

THE BUNTING GENUS

ARE distinguished by a strong conic bill, and in the roof of the upper mandible a hard knob to break and grind seeds.

The first of this species which we shall mention, is a bird well known by the name of the YELLOW-



HAMMER. It is larger than the sparrow. A greenish yellow, spotted with brown, is the hue of its head ; the throat and belly are yellow ; the breast and sides, under the wings, are mingled with red ; and the tail is of a flesh colour. It builds on the ground, feeds on insects and seeds ; and has a soft note, not unlike that of the linnet.

The COMMON BUNTING is the size of the former, but stouter in the body. It is of a pale olive brown. They collect in flocks in the winter, and are often seen on the branch of some bare tree in immense numbers. They are caught and sold, from the similarity of their plumage, for larks, and are called Bunting-larks.

The REED SPARROW inhabits marshy places. In the male the head, chin, and throat are black, with a white ring round its neck. The upper parts of

the body are brownish red, with a streak of black, the lower parts white. In Lorraine, and some parts of Europe, they are birds of passage.

The TAWNY BUNTING is six inches three fourths long. The head and neck are tawny, the back black, the lower parts of the body are white, and the tail a little forked. It is not a common bird in England. The SNOW BUNTING has the forehead and crown white, with some mixture of black; the back, and middle feathers of the tail black; the rump, the outer feathers of the wings, and tail white. They are called in Scotland *Snow-flakes*, from their appearance in snowy weather: the more northward they are found, the whiter the plumage. The MOUNTAIN FINCH is less common. The plumage in general, on the upper parts, is ash colour, spotted with black; and the breast is waved with flame colour.

But the most famous bird of all this genus is the ORTOLAN. It is somewhat less than the yellow-hammer. The plumage on the upper parts is brownish chestnut, mixed with black, the under parts are pale rufous. These birds are common in France and Italy, but are not found in England. They are caught in numbers to fatten for the table. This is done by including them in a dark room, and feeding them with oats and millet. By this process they become so fat, that they would die from that cause alone, were they not killed for sale. In this state they will sometimes weigh three ounces, and are accounted the most luxurious repast of the epicure, being, as it were, one lump of exquisite fat.

The BLACK-THROATED BUNTING is a native of America. It is in general brown, with a yellow breast, and a black spot under the throat. There are about sixty-five species of the Bunting, foreign and domestic.

THE FINCHES.

THE Finch genus is distinguished from the preceding by a bill perfectly conic. It includes more than one hundred species, one of which, the Sparrow, has given a name to this order of birds. Of the Sparrow there are two species, the Tree and the House Sparrow, the latter of which is the larger : they are both well known birds.

THE SPARROW



Is one of the most familiar of the winged race, constantly fluttering round our habitations, and even in the streets, and is seldom absent from our orchards and gardens. At the same time it is so crafty that it is not easily ensnared. In its wild state it has no note, but, if taken young, it may be taught to sing. It is a courageous little creature, and will undauntedly combat with birds that are ten times bigger than itself. Occasionally it will intrude into pigeon houses, and, in spite of the opposition of the old pigeons, will force open the naked craw of the young ones, and feed on the half-digested grain. It is universally hated by farmers

as injurious to their rural economy; yet its utility has been clearly proved to overbalance its depredations: for it has been known that a single pair of Sparrows, during the time they have to feed their young, have destroyed on an average every week between three and four thousand caterpillars, besides a variety of winged insects, which would be the parents of myriads of caterpillars.

These birds generally build their nests under the eaves of houses, or in holes in the walls; and the affection of the female towards her young is equally strong and interesting. The nest is formed of hay and straw, and is lined with feathers, and is so placed as to be screened from the sun and rain. The cock Sparrow is distinguished from the hen by a jet black spot under the bill, on a whitish ground.

THE GOLDFINCH



Is the most beautiful bird which inhabits these regions, and is also one of the most docile and harmonious. It is of a gentle nature; soon becomes reconciled to the loss of freedom; and, as few birds are more intelligent and obedient, it may be taught a variety of entertaining tricks. When confined, it delights to view itself in a mirror. From its fond-

ness for thistle seeds, it is sometimes called the Thistlefinch. The female builds an admirably constructed and warm nest, generally in fruit trees, and lays five eggs.

THE CHAFFINCH.



THE bill of this bird is of a pale blue, tipped with black; the eyes are hazel; the forehead is black; the crown of the head and the hinder part and sides of the neck are of a bluish ash colour; the sides of the head, throat, fore part of the neck, and the breast are of a vinaceous red; the belly, thighs, and vent white, slightly tinged with red; the back is of a reddish brown, changing to green on the rump: both greater and lesser coverts are tipped with white, forming two pretty large bars across the wing; the bastard wing and quill feathers are black, edged with yellow; the tail, which is a little forked, is black, the outermost feather edged with white; the legs are brown. The female wants the red upon the breast; her plumage in general is not so vivid, and inclines to green; in other respects it is not much unlike that of the male.

This handsome little bird is every where well

known; it commences its short and repeated song early in the spring, and continues it till about the middle of summer, after which it is heard no more. The female lays generally five or six eggs, of a pale reddish colour, sprinkled with dark spots, principally at the larger end. During the time of hatching, the male is very assiduous in his attendance, seldom straying far from the nest, and then only to procure food. Chaffinches subsist chiefly on small seeds of various kinds; they likewise eat caterpillars and insects, with which they also feed their young. They are seldom kept in cages, as their song possesses no variety, and they do not readily learn the notes of other birds. The males frequently maintain obstinate combats, and fight till one of them is vanquished, and compelled to give way. In Sweden these birds perform a partial migration; the females collect in large flocks in the latter end of September, and, leaving their mates, spread themselves through various parts of Europe: the males continue in Sweden, and are again joined by their females, who return in great numbers, about the beginning of April, to their wonted haunts.

THE SISKIN, OR ABERDAVINE,

Is a much less common bird, being in fact only a bird of passage in England. The bill is white, the top of the head black, the upper parts of the body yellowish olive, and the under parts grayish yellow. It is a song bird, but of inferior note.

THE LINNET.



THIS favourite bird, which is universally admired for the melody of its voice, it being one of the sweetest of our warblers, is in length, from the point of the bill to the end of the tail, five inches and a half; the bill is a bluish gray; the eyes are hazel; the upper parts of the head, neck, and back, are of a dark reddish brown, the edges of the feathers pale; the under parts are of a dirty reddish white; the breast is deeper than the rest, and in spring becomes a very beautiful crimson, except in the female, whose breast is marked with only stripes of brown; the sides are spotted with brown likewise; the tail is brown, with white edges, except the two middle feathers which have reddish margins, it is somewhat forked; the legs are brown.

The Linnet is so much esteemed for the sweetness of his singing that, by many persons, he is thought to excel all small birds. He has certainly a curious fine note of his own, little inferior to the most celebrated birds, and may be taught likewise to pipe or whistle the song of any other bird; but, as his own is so good, that trouble is unnecessary. He is, however, very apt in learning, and if brought up from the

nest, will take the woodlark's or canary bird's song to perfection. In some instances he has been said to pronounce words with great distinctness.

The cock Linnet may be known, either old or young, by two marks: first, the feathers on his back are much browner than those of the hen; secondly, by the white on the three or four longest feathers of the wing: if it appear clear, bright, and broad, and reach up to the quills, it is a sure sign of a cock bird, for the white in the wing of the hen is much less, fainter, and narrower. In spring, too, as we have already mentioned, the breast of the cock is crimson.

These birds commonly build in a thick bush, or hedge, and sometimes among furze bushes, &c. making a small, pretty nest; the outside, of bents, dried weeds, and straw, and the bottom all matted together; the inside, of fine soft wool, mixed with down stuff, gathered from dried plants, with a few horse-hairs, made exceedingly neat and warm: on which she lays four, and sometimes five, white eggs, with fine red specks, especially at the blunt end; and has young ones by the middle of April or beginning of May. They are particularly fond of linseed, from which, it is supposed, they derive their name.

Of the REDPOLE, or RED-HEADED LINNET, there are two species, the greater and the less; but both are less than the common Linnet. They are both distinguished by a blood-coloured spot on the head, and by the breast being tinged with the same colour; the breast of the females is, however, yellow, whence it is a common fraud in the shops to paint their breasts red, in order to pass them off for males. The MOUNTAIN LINNET, or Twit, includes also two varieties; the one the size of the common Linnet,

the other much smaller. The colour of the plumage is in general brownish red, like the common Linnets, but the rump is crimson, scarlet, or orange. They are common in England, and are easily tamed; but there is no harmony in their note.

This genus comprehends a great variety of foreign birds eminent for their beautiful plumage, and some for the music of their song: among these, the best known to Europeans is the CANARY BIRD, which,



indeed, is now become so common, and has continued so long in a domestic state, that its native habits, as well as its native country, seem almost forgotten. Though, by the name, it appears that these birds came originally from the Canary Islands, yet we have them only from Germany, where they are bred up in great numbers, and sold into different parts of Europe.

In its native islands, a region equally noted for the beauty of its landscapes and the harmony of its groves, the Canary Bird is of a dusky gray colour, and so different from those usually seen in Europe, that some have even doubted whether it be of the same species. With us, they have that variety of colouring usual in all domestic fowls; some white, some mottled, some beautifully shaded with green; but they are more esteemed for their note than their

beauty, having a high, piercing pipe, as indeed all those of the Finch tribe have, continuing it for some time in one breath without intermission, then raising it higher and higher by degrees, with great variety. The Canary will breed freely with the goldfinch and linnet, and the produce is a beautiful bird called a Mule.

The Canary Finch is a social and familiar bird, and is capable of contracting an attachment for the person to whom it belongs. It will perch on the shoulder of its mistress, and peck its food from her hand or her mouth. It is also capable of being taught still more extraordinary feats. In 1820, a Frenchman exhibited four and twenty Canary Birds in London, many of which he said were from eighteen to twenty-five years of age. Some of these balanced themselves, head downward, on their shoulders, having their legs and tail in the air. One of them, taking a slender stick in its claws, passed its head between its legs, and suffered itself to be turned round, as if in the act of being roasted. Another balanced itself, and was slung backward and forward on a kind of slack rope. A third was dressed in military uniform, having a cap on its head, wearing a sword and pouch, and carrying a firelock in one claw: after some time sitting upright, this bird, at the word of command, freed itself from its dress, and flew away to the cage. A fourth suffered itself to be shot at, and falling down, as if dead, to be put into a little wheelbarrow, and wheeled away by one of its comrades; and several of the birds were at the same time placed upon a little firework, and continued there quietly, and without alarm, till it was discharged.

THE FLYCATCHERS

ARE with us summer birds only, and take their name from feeding on insects. The SPOTTED FLYCATCHER, however, eats fruit, and is on that account called, in Kent, the *Cherry-sucker*. It is, in general, of a mouse colour, the head spotted with black, and the wings and tail edged with white. Of all our summer birds it is the most mute and the most familiar; it also appears the last of any. It builds in a vine, or a sweetbriar against the wall of a house, or in the hole of a wall, or on the end of a beam or plate, and often close to the post of a door where people are going in and out all day long. This bird does not make the least pretensions to song; but uses a little inward wailing note when it thinks its young in danger from cats or other annoyances. It takes its stand on the top of some stake or post, from whence it springs forth on its prey, catching a fly in the air, and hardly ever touching the ground, but returning still to the same stand for many times together.

THE PIED FLYCATCHER.



THIS bird is about five inches long. It has a black beak, hazel eyes, and white forehead; the top of the head, the back, tail, and legs, are black; the rump

is dashed with ash colour; the wing coverts are dusky, and the greater coverts are tipped with white; the exterior sides of the secondary quills are white, as are also the outer feathers of the tail, and all the under parts, from the bill to the tail. The female is much smaller than the male, but has a longer tail; is brown where he is black; and has not the white spot on the forehead. They are most plentiful in Yorkshire, Lancashire, and Derbyshire. Their nests are built in holes of trees. The parent birds incessantly feed their young with small flies, which they catch very expertly.

There are upwards of eighty foreign birds of this kind.

The FAN-TAILED FLYCATCHER is a native of New Zealand. It is about the size of the bearded titmouse, may be easily tamed, and will sit on any person's shoulder to pick off the flies. The whole head is black, with a white collar; the upper parts of the body olive brown; the under parts yellowish nut colour, and the tail white, except the two middle feathers, which are black.

THE LARK GENUS

INCLUDES about twenty-eight species, all of them distinguished by the length of their heel. The GREAT-CRESTED LARK, the CALANDRE LARK, the WHITE-WINGED LARK, the BLACK LARK, and some others, are found in different parts of Europe, but do not visit Britain. The SKYLARK, which is the most common, the WOODLARK, the TITLARK, the FIELD LARK, which is larger than the former, but less than the Skylark; the RED LARK, and the SMALL CRESTED LARK, which is, however, very un-

common, are all British birds. They are all song birds; but their music in confinement is much inferior to what it is when possessed of their native liberty. The music, indeed, of every bird in captivity produces no very pleasing sensations; it is but the mirth of a little animal insensible of its unfortunate situation: it is the landscape, the grove, the golden break of day, the contest upon the hawthorn, the fluttering from branch to branch, the soaring in the air, and the answering of its young, that gives the bird's song its true relish. These united improve each other, and raise the mind to a state of the highest yet most harmless exultation.

The Lark builds its nest upon the ground, beneath some turf that serves to hide and shelter it. The female lays four or five eggs, of a dusky hue, in colour somewhat like those of a plover. It is while she is sitting that the male usually entertains her with his singing; and while he is risen to an imperceptible height, yet he still has his loved partner in his eye, nor once loses sight of the nest either while he ascends or is descending. This harmony continues several months, beginning early in the spring on pairing. In winter they assemble in flocks, when their song forsakes them, and the bird-catchers destroy them in great numbers for the tables of the luxurious.

The common food of the young Larks is worms and insects; but after they are grown up they live chiefly on seeds, herbage, and most other vegetable substances.

The song of the Lark commences early in the spring, and continues throughout the summer, but is chiefly heard in the morning and evening. The Lark ascends almost perpendicularly, and by successive

springs, into the air, and hovers there at such a vast height as often to be invisible, though its notes are clearly heard. It is one of the few birds that pour forth their song while on the wing. In consequence



of the form of the hinder toe, the Lark never perches on trees; it being unable to cling by the toes. The Lark may be easily tamed, and will then eat off the table, and even alight on the hand.

The smallest species of this tribe is the GRASSHOPPER LARK. The upper part of its body is of a variegated greenish brown; the under parts of a yellowish white, irregularly speckled on the neck and breast. It is a very shy bird, and forms its nest in some solitary place. Its name is derived from its making a kind of sibilous whisper, not unlike the sound emitted by a grasshopper.

THE WAGTAIL.

OF the Wagtail there are about eleven species: with us only the WHITE (so called from having a greater proportion of white on the belly and tail than the others), the YELLOW, and GRAY WAGTAIL, are common.

This is an elegant slender bodied bird, and, next

to the robin and the sparrow, is the most familiar with man. It weighs about six drachms, and is about seven inches and a half from the tip of the bill to the end of the tail, and about eleven between the point of each wing, when extended. It has a slender, straight, sharp bill, of a black or dusky colour, upwards of an inch long: the circles of the eyes are brown, or hazel-coloured, with a large white spot encircling each eye; and another or two underneath it, on each side of the throat; the top of the head and the fore part of the neck, or throat, and the upper part of the back, are all black. Some of the tips of the quill feathers are white, which form a small white line upon the wing, and another is also formed by the white edges of some of the rows of the covert feathers; the lower parts of the breast and belly are



both white. The tail is about three inches long, and is almost continually in motion, wagging up and down, from whence it is supposed to derive the name of Wagtail: the outer feathers are chiefly white, the rest black. This motion is supposed to be intended to make the tail act as a kind of lever or counterpoise, to balance the body on the legs. The claws are sharp-pointed and pretty long, of a dusky or blackish colour.

These birds are frequently seen about the brinks of rivers, ponds, and small pools of water, and also

amongst the low grass in dewy mornings, where they feed upon flies, worms, beetles, and other small insects. They particularly haunt streams where women come to wash their linen, the insects being attracted thither by the froth of the soap. From this circumstance the French call them *Lavandières*. They build under the eaves of houses, and in holes in the walls of old buildings; laying four or five eggs.

There is another species called the YELLOW WAGTAIL, from the colour of its head, neck, and back. It is somewhat larger than the common Wagtail, owing to the great length of its tail. It has a dark brown bill, and over each eye a pale streak; the throat and chin are black, and all the under parts of the body are a bright yellow; the wing coverts and quills are dark brown, the former with pale edges; the secondaries, which are almost as long as the greater quills, are white at the base, and tipped with yellow on the outer edges; the middle feathers of the tail are black, the outer ones white, and the legs yellowish brown. The female builds her nest on the ground, and sometimes in the banks of rivulets, laying from six to eight eggs, of a dirty white, marked with yellow spots.

The Wagtails, as some affirm, change their quarters in autumn from the north to the south of England. This, however, cannot uniformly be the case; there being one striking fact which is in contradiction to this theory. It is certain that they disappear in the autumn, but it is by no means certain that they migrate. Should the sun shine bright in the winter, and the day be a settled fine one, they are sure to reappear, chirping with the utmost briskness, and manifesting not the slightest signs of fatigue. It is obvious, therefore, that in such cases they cannot have journeyed from any very considerable distance.

THE WARBLERS

ARE a very numerous genus, including upwards of one hundred and fifty species, most of them (as the name may serve to intimate) distinguished for the excellence of their music. Of these, the first rank is certainly due to the NIGHTINGALE. This most famous



of the feathered tribe visits England in the beginning of April, and leaves it in September. It is found but in some of the southern parts of that country, being totally unknown in Scotland, Ireland, or North Wales. They frequent thick hedges and low coppices, and generally keep in the middle of the bush, so that they are rarely seen. It is not by the beauty of his plumage that this universally admired bird has become a general favourite, and the theme of almost every poet; for he is one of those warblers which are the most humbly attired. He is about six inches long, and the upper part of his body is of a rusty brown, tinged with olive; the under parts are of a pale ash colour, almost white at the throat and belly. But in his song he surpasses all the choristers of air, his notes being exquisitely varied, soft, and harmonious, and rendered still more pleasing by their

being poured forth in the night, when the other warblers are all silent. They begin their song in the evening, and generally continue for the whole night. For weeks together, if undisturbed, they sit upon the same tree; and Shakspeare rightly describes the Nightingale sitting nightly in the same place. In a calm evening he may be heard to the distance of more than half a mile.

In the beginning of May the Nightingale prepares to make its nest, which is formed of the leaves of trees, straw, and moss. The nest, being very eagerly sought after, is as cunningly secreted; so that but very few of them are found by the boys when they go upon these pursuits. It is built at the bottom of hedges, where the bushes are thickest and best covered. While the female continues sitting, the male, at a good distance, but always within hearing, cheers the patient hour with his voice, and, by the short interruption of his song, often gives her warning of approaching danger. She lays four or five eggs; of which but a part, in our cold climate, come to maturity.

The delicacy, or rather the fame, of this bird's music has induced many to abridge its liberty to secure its harmony. Its song, however, in captivity is not so very alluring; and the tyranny of taking it from those hedges, where only it is most pleasing, still more depreciates its imprisoned efforts. Gesner assures us, that it is not only the most agreeable songster in a cage, but that it is possessed of a most admirable faculty of talking. He tells the following rather doubtful story in proof of his assertion, which he says was communicated to him by a friend. "Whilst I was at Ratisbon," says his correspondent, "I put up at an inn, the sign of the Golden Crown,

where my host had three Nightingales. It happened at that time, being the spring of the year, when those birds are accustomed to sing, that I was so afflicted with the stone, that I could sleep but very little all night. It was usual then, about midnight, to hear the two Nightingales jangling, and talking with each other, and plainly imitating men's discourses. Besides repeating the daily discourse of the guests, they chanted out two stories. One of their stories was concerning the tapster and his wife, who refused to follow him to the wars as he desired her; for the husband endeavoured to persuade his wife, as far as I understood by the birds, that he would leave his service in that inn, and go to the wars in hopes of plunder. But she refused to follow him, resolving to stay either at Ratisbon, or go to Nuremberg. There was a long and earnest contention between them; and all this dialogue the birds repeated. They even repeated the unseemly words which were cast out between them, and which ought rather to have been suppressed and kept a secret. The other story was concerning the war which the emperor was then threatening against the Protestants; which the birds probably heard from some of the generals that had conferences in the house. These things did they repeat in the night after twelve o'clock, when there was a deep silence. But in the daytime, for the most part, they were silent, and seemed to do nothing but meditate and revolve with themselves upon what the guests conferred together as they sat at table, or in their walks."

THE REDBREAST.



THOUGH the Redbreast is generally admired for his song, he is still more admired for his attachment to, and confidence in, mankind. In all countries, he is a favourite, and has what may be called a pet name. The inhabitants of Bornholm call him *Tommi Liden*, the Norwegians, *Peter Ronsmed*, the Germans, *Thomas Gierdet*, and in our country he is known as Robin Redbreast, or by the still more familiar appellation of Bob. Buffon describes with his usual elegance the winter manners of this bird. "In that season," says he, "they visit our dwellings, and seek the warmest and most sheltered situations; and if any one happens still to continue in the woods, it becomes the companion of the faggot maker, cherishes itself at his fire, pecks at his bread, and flutters the whole day round him, chirping its slender *pip*. But when the cold grows more severe, and thick snow covers the ground, it approaches our houses, and taps at the windows with its bill, as if to entreat an asylum, which is cheerfully granted; and it repays the favour by the most amiable familiarity, gathering the crumbs from the table, distinguishing affectionately the people of the house, and assuming a warble, not indeed so rich as that in the spring, but more delicate. This it retains through all the rigours

of the season ; to hail each day the kindness of its host, and the sweetness of its retreat." The bill of the Robin is slender and delicate ; its eyes are large, dark, and expressive, and its aspect mild ; its head and all the upper parts of its body are brown, tinged with a greenish olive ; the neck and breast are of a fine deep reddish orange ; a spot of the same colour marks its forehead : its belly is whitish, and the legs and feet of a dusky black. It is near six inches in length from the tip of the bill to the end of the tail, the former being about half an inch, and the latter two inches and a half.

This bird, in our climate, has the sweetest song of all others : the notes of other birds are, indeed, louder, and their inflections more capricious ; but the Redbreast's voice is soft, tender, and well supported ; and the more to be valued as we enjoy it the greatest part of the winter.

During the spring, the Robin haunts the wood, the grove, and the garden, and retires to the thickest and shadiest hedgerows to breed in, where its nest is usually placed among the roots of trees, in some concealed spot near the ground. In winter it endeavours to support itself, by chirping round the warm habitations of mankind, and by coming into those shelters where the rigour of the season is artificially expelled, and where insects are found in the greatest numbers, attracted by the same cause. The female lays from five to seven eggs, of a dull white colour, diversified with reddish streaks. Insects and worms are the principal food of the Redbreast. The latter it very dexterously renders fit to be eaten, by taking hold of the extremity of one in its beak, and beating it against the ground till the inside comes away, and then repeating the operation with the *other end*, till the outer part is entirely cleansed.

THE REDSTART.



THIS bird measures rather more than five inches in length. Its bill and eyes are black ; its forehead is white ; the cheeks, throat, fore part, and sides of the neck are black, which colour extends over each eye ; the crown of the head, hinder part of the neck, and the back are of a deep blue gray ; in some subjects, probably old ones, this gray is almost black ; its breast, rump, and sides are of a fine glowing red, inclining to orange colour, which extends to all the feathers of the tail, excepting the two middle ones, which are brown ; the belly is white ; the feet and claws are black. The female differs considerably from the male, her colours are not so vivid : the top of her head and back are of a gray ash colour, and the chin is white.

The Redstart is migratory ; it appears about the middle of April, and departs in the latter end of September, or beginning of October ; to what country it retires is not known ; it frequents old walls and ruinous edifices, where it makes its nest, composed chiefly of moss, lined with hair and feathers. It is distinguished by a peculiar quick shake of its tail from side to side, on its alighting on a wall or

other place. Though a wild and timorous bird, it is frequently found in the midst of cities, always choosing the most difficult and inaccessible places for its residence: it likewise builds in forests, in holes of trees, or in high and dangerous precipices. The female lays four or five eggs, not much unlike those of the hedge-sparrow, but somewhat longer. Should she discover that they have been touched, she immediately forsakes them. These birds feed on flies, spiders, the eggs of ants, small berries, soft fruits, and such like. If taken when old, it is impossible to tame the Redstart, but if caught young, and kept warm during the winter, it may be domesticated, and will pour forth its song, by night as well as by day, with great sweetness and freedom.

THE BLACKCAP.



THIS bird is rather more than five inches in length, and is of the titmouse kind. The upper mandible is of a dark horn colour, the under one light blue, and the edges of both whitish; the top of the head is black, from which circumstance it derives its name; the sides of the head and back of the neck are ash colour; the back and wings of an olive gray; the throat and breast are of a silvery gray; the belly white; the legs are of a bluish colour, inclining to

brown; the claws black. The head of the female is of a dull rust colour.

The Blackcap visits us about the middle of April, and retires in September: it is common in Italy, but in England it is rather a rare bird. It frequents gardens, and builds its nest near the ground; it is composed of dried grass, moss, and wool, and lined with hair and feathers. The female lays five eggs, of a pale reddish brown, sprinkled with darker coloured spots. During the time of incubation the male attends the female, and sits by turns; he likewise procures her food, such as flies, worms, and insects. This bird sings sweetly, and so like the nightingale, that in Norfolk it is called the mock-nightingale. Blackcaps feed chiefly on flies and insects, and not unfrequently on ivy and other berries.

THE WREN.



THIS Lilliputian songster is a native of every part of Europe. It weighs only three drachms, is but four inches in length, from the point of the bill to the end of the tail, and is admired for the loudness of its note, compared with the little body whence it issues. It will carol forth its strains unconcerned during a fall

of snow. Even when confined in a cage it has sometimes been known to sing as strong as in its native fields, and with equal freedom and mellowness of song. It commonly creeps about hedges or trees, in the vicinity of farmyards, and sings very late in the evening, though not, like the nightingale, after the landscape is enveloped with darkness.—The female lays from ten to eighteen eggs, which are very small, white, and sprinkled with red spots.

The Wren constructs its nest in a very curious manner. Unlike other birds, it does not begin first at the bottom. If the nest be placed against a bank it commences the fabric at the top; if against a tree, it at the outset traces the outline on the bark, and closes the sides and top in succession. When it builds against a hayrick, the exterior of the nest is of that material; when it is on the side of a tree covered with white lichen, or green moss, the fabric is of one or other of those substances; but the interior is uniformly lined with feathers.

THE GOLDEN-CRESTED WREN.

THIS is the smallest of all British birds, is very beautiful, and has an extremely delicate and pleasing note, somewhat less loud than that of the Common Wren. In winter it may be distinguished by its shrill squeak, which somewhat resembles the cricking of a grasshopper. It is very agile, and is almost constantly in motion, either fluttering from branch to branch, creeping on all sides of the trees, clinging to them in all ways, and often hanging with its back downward, like a titmouse. Insects and their eggs, small worms, and various kinds of seeds, constitute its food. The female lays from ten to eighteen eggs, which are scarcely larger than peas; and the nest is

frequently formed amongst the leaves at the top of the branch of a fir tree, where, in high winds, it swings like a pendulum.

Of this Wren the head and upper part are of a deep reddish brown; the back, and the coverts of the wings and tail are marked with slender transverse black lines; the quill feathers are barred with black and red; the belly and sides are crossed with narrow dusky and pale reddish brown lines; the tail is crossed with dusky bars; the throat is a yellowish white; and there is a stroke of white above each eye.

The WILLOW WREN is a native of the northern snowy parts of Europe, and almost rivals the nightingale in the sweetness of its song, which it pours forth from the loftiest branches of the birch tree. It visits England about the middle of April, and departs at the end of September.

The HEDGE SPARROW is a well known bird, which has a sweet and plaintive note, which it begins with the first frosty mornings, and continues for some time in the spring.

THE WHEATEAR.



THIS bird weighs upwards of an ounce, and has a slender black bill, about half an inch long; the tongue is cloven or slit, and the inside of the mouth

black; the eyes are of a hazel colour, above which there is a white line passing towards the hinder part of the head; and below them, a large black one, which extends itself from the corners of the mouth to the ears. The head and back appear of a cinereous colour, with a mixture of red. The rump is generally white, from whence, by some, it has the name of White-tail; the belly is white, tinged with yellow, dashed faintly with red; the breast and throat are more deep; the coverts and quills are black, with their extreme edges white, tintured with a dusky red; the tail is something more than two inches long, and the upper half of it is black, the lower white. The female wants the black mark across the eyes; the bar of white across the tail is narrower than that of the male; and the general colours are more dull.

The Wheatear visits England annually in the middle of March, and leaves us in September. The females come first, about a fortnight before the males; and they continue to come till the middle of May. In some parts of England they are found in vast plenty, and are much esteemed. About Eastbourne, in Sussex, they are taken in snares made of horse-hair, placed beneath a long turf. As they are very timid birds, the motion even of a cloud, or the appearance of a hawk, will immediately drive them into the traps. These traps are first set every year on St. James's day (July 25); soon after which they are caught in astonishing numbers, considering that they are not gregarious, and that more than two or three are scarcely ever seen flying together. The numbers annually ensnared in the district of Eastbourne alone is said to amount to nearly two thousand dozen. One shepherd has caught eighty-four dozen of them in a day. The birds caught are

chiefly young ones, and they are invariably found in the greatest number when an easterly wind prevails; as they always come against the wind.

It is supposed, that the immense swarms of these birds which are found on the downs about Eastbourne, are occasioned by a species of fly, their favourite food, that feeds on the wild thyme, and abounds in the adjacent hills. In England they are held in as much estimation as the ortolan is on the continent. A few of these birds breed in the old rabbit-burrows there. The nest is large, and made of dry grass, rabbit's down, a few feathers, and horsehair. The eggs are from six to eight, and are of a light colour.

The WHIN-CHAT, the STONE-CHATTER, and the WHITE-THROAT, are all common birds of this genus: but it would be an endless task to range with the minuteness of a nomenclator through all the varieties. Of the foreign birds the THORN-TAILED WARBLER is one of the most remarkable. It is a native of Terra del Fuego, and is about the size of a sparrow. The upper parts of the body are reddish brown, mottled with yellow, and the breast and belly are white.

THE TITMOUSE.



Of the Titmouse there are about six species known in these climates, though there are not less than twenty-eight in all. The GREAT, the BLUE, the COLE,

the MARSH, the LONG-TAILED, and the BEARDED TITMOUSE, are all British birds. This last, which is about six inches long, is distinguished by a tuft of black feathers under each eye, resembling a mustachio. It is common in the marshes near London, and has erroneously been classed among the butcher birds. The Titmouse, which is also called the Tomtit, Blue-cap, and Nun, is about four inches and a half in length, and has a straight black bill about half an inch long, pretty thick. The crown of the head is of a fine blue colour; from the bill to the eyes there is a black line; and the forehead and cheeks are white. The latter colour descends as low as the shoulders and middle part of the back, where it appears more shaded with a glossy green; the rump is of a fine blue. The quill feathers have some of their tips white, some blue, others green; the covert feathers by their white tips make a small transverse white line upon each wing. The breast, belly, and thighs are yellow, with a broad black line passing from the throat down the middle of the breast to the vent. The tail is about two inches and a half long, of a black colour, except the outward edges of some of the feathers, which are blue. The legs and feet are a sort of lead colour.

These birds feed on insects, seeds, and fruit. They often excite alarm in the owners of gardens, under the idea that they are destroying the buds, while in fact, they are engaged in the beneficial operation of seeking for the caterpillars that infest them. They are very prolific, laying from fourteen to twenty eggs at a time. If the eggs be touched, the female forsakes her nest, and builds again. Titmice will venture to assault birds that are twice or thrice their own bulk, and in this case they direct their aim chiefly at the eyes. They often seize upon birds that are

weaker than themselves; which they kill, and having picked a hole in their skull, eat out their brains. They are very fond of flesh, vast admirers of suet, and frequently pick bones from dunghills and other places. This bird is distinguished above the rest of its kind, by its rancour against the owl.

There are many varieties of this bird; the GREATER TITMOUSE is about five inches in length. The nests of almost every kind are constructed with the most exquisite art, and with materials of the utmost delicacy; such as moss, hair, and the web of spiders, with which the whole is strongly tied together.

Many of the foreign birds of this genus are curious. The GREAT-HEADED TITMOUSE is a native of New Zealand. It is four inches and a half long. All the upper parts of the body are black, except a spot of white on the head, wings, and tail; the breast is orange.

THE SWALLOW KIND



COMPREHENDS about thirty-seven species. All of them have bills which are short, broad at the bent, small at the point, and slightly curved. Their tongue is short, broad, and cloven, the nostrils are open, and the mouth is wide. Except in one species, the wings are long, and the tail is forked. They have short

slender legs, and the toes are placed three before and one behind, with the exception of four species, in which the toes are all placed forward. They have a peculiar twittering voice, fly with extreme rapidity, scarcely ever walk, and perform all their functions while they are on the wing or sitting. Their plumage is glossed with a rich purple. The wood cut represents the House or Chimney Swallow.

To the martins, and other small birds, the Swallow announces the approach of birds of prey. By a shrill alarming note, he summons around him all his own species and the martins, as soon as an owl or hawk appears. The whole band then pursue and strike their enemy till they expel him from the place; darting down on his back, and rising in a perpendicular line with perfect security. The Swallow will also strike at cats while they are climbing the roofs of houses.

Early in the spring, when the solar beams begin to rouse the insect tribes from their annual state of torpidity, the Swallow is seen returning from its long migrations beyond the ocean; and in proportion as the weather grows warmer, and its insect supply increases, it gathers strength and activity. The breed of the Swallow ought to be cherished, as the bird is of infinite service to mankind by destroying myriads of vermin which would prove fatally prejudicial to the labours of the husbandman. The female builds her nest with great industry on the tops of chimneys, and sometimes breeds twice a year. The greater part of these birds quit our island at the latter end of September; but some are said to retire to holes and caverns, where they pass the winter in a state of torpidity. It is affirmed that, in their torpid state, they can exist even under water.

Of the Swallow tribe, all the birds have been observed to drink while in their flight, sipping the surface of the water. It is, however, generally speaking, only the Swallow that washes on the wing, by making many successive dips into a pond. Swallows will attend horsemen for miles, over wide downs, to collect such insects as are aroused by the trampling of the horses' feet.

THE SWIFT.

THIS is the largest of the swallow kind known in these climates, being often eighteen inches long, though the entire weight of the bird is not more than one ounce. The whole plumage is of a sooty black, except the throat, which is white. The feet, which are so small that the actions of walking and rising from the ground seem very difficult, are of a particular structure, all the toes standing forward. For this reason the Swift never settles on the ground, unless by accident. They have, however, a strong grasp with their feet, which enables them to cling to walls. It spends more of its time on the wing than any other swallow, and its flight is more rapid. In summer it keeps on the wing at least sixteen hours out of the twenty-four. It breeds under the eaves of houses, in steeples, and other lofty buildings; and makes its nest of grass and feathers. It has but one brood in the summer, and never more than two young ones at a time.

The voice of the Swift is a harsh scream; yet there are few ears to which it is not pleasing, from an agreeable association of ideas, since it is never heard but in the most lovely summer weather.

These birds visit us the latest, and retire the ear-

liest, of all their tribe ; as they withdraw from this country before the middle of August, generally by the tenth, and not a single straggler is to be seen by the twentieth. This early retreat is totally unaccountable, as that time is often the most delightful in the year. But what is yet more extraordinary, they begin to retire still earlier in the most southerly parts of Andalusia ; where they can by no means be influenced by any defect of heat, or even of food.

THE MARTIN.



This bird, “ the temple-haunting Martlet,” as it is denominated by Shakspeare, is inferior in size to the swallow, and its tail is much less forked. The plumage, however, is nearly the same ; the upper part of the body, wings, and tail being black, glossed with purple ; and the under parts white. They are much less agile than the chimney swallow, and have a placid easy motion. These birds sometimes build against the sides of cliffs that overhang the sea ; but more frequently under the eaves, in the corners of windows, or under cornices. The materials of the nest are earth, tempered and mixed with straw, and lined with small straws, grasses, and feathers. The little architect builds only during the morning, and allows the fabric to harden during the rest of the

day. The same nest is often inhabited for several years.

The SAND MARTIN is the least of the swallow kind that visits Great Britain. The upper parts of the body are mouse coloured; the breast and belly are white, with a mouse-coloured ring as a collar. To form its nest it bores two feet deep into a high sand bank, where it deposits five or six white eggs. These holes it digs with great expedition in a serpentine direction. Its motions are capricious, somewhat like those of a butterfly. It has been said that the young of this bird are very fat, and in flavour scarcely inferior to the Ortolan.

The peculiar conformation of the various species of swallows seems attended with a similar peculiarity of manners. Their food is insects, which they always pursue flying. For this reason, during fine weather, when the insects are most likely to be abroad, the swallows are for ever upon the wing, and seen pursuing their prey with amazing swiftness and agility. All smaller animals, in some measure, find safety by winding and turning, when they endeavour to avoid the greater: the lark thus evades the pursuit of the hawk; and man the crocodile. In this manner, insects upon the wing endeavour to avoid the swallow; but this bird is admirably fitted by nature to pursue them through their shortest turnings. Besides a great length of wing, it is also provided with a long tail, which, like a rudder, turns it in its most rapid motions; and thus, while it is possessed of the greatest swiftness, it is also possessed of the most extreme agility.

The nest of these birds is built with great industry and art; it is formed of mud from some neighbouring brook, well tempered with the bill, moistened

with water for the better adhesion, and still farther kept firm, by long grass and fibres: within it is lined with goose feathers, which are ever the warmest and the neatest. The Martin covers its nest at top, and has a door to enter at; the swallow leaves hers quite open. But our European nests are nothing to be compared with those the ESCULENT SWALLOW builds on the coasts of China and Coromandel; the description of which we give, in the plain honest phrase of Willoughby. "On the sea-coast of the kingdom of China," says he, "a sort of party-coloured birds, of the shape of swallows, gather a certain clammy, glutinous matter, perchance the spawn of whales and other young fishes, of which they build their nests, wherein they lay their eggs and hatch their young. These nests the Chinese pluck from the rocks, and bring them in great numbers into the East Indies to sell. They are esteemed, by gluttons, as great delicacies; who dissolving them in chicken or mutton broth, are very fond of them; far before oysters, mushrooms, or other dainty and lickerish morsels."

At the latter end of September the Swallows leave us: and for a few days previous to their departure, assemble, in vast flocks, on house-tops, as if deliberating on the fatiguing journey that lies before them. This is no slight undertaking, as their flight is directed to Congo, Senegal, and along the whole Morocco shore. There are some, however, left behind in this general expedition, that do not depart till eight or ten days after the rest. These are chiefly the latter weakly broods, which are not yet in a condition to set out.

Those that migrate are first observed to arrive in Africa about the beginning of October. They are thought to have performed their fatiguing journey

in the space of seven days. They are sometimes seen, when interrupted by contrary winds, wavering in their course far off at sea, and lighting upon whatever ships they find in their passage. They then seem spent with famine and fatigue, yet still they boldly venture, when refreshed by a few hours rest, to renew their flight and continue the course which they had been steering before.

THE GOATSUCKER,

OR FERN OWL,



Is nearly allied to the swallow, both in form and manners. Like the swallow, it is remarkable for the wideness of its gape; like it, it feeds upon insects; like it, collects its food upon the wing; indeed by some authors it has been termed the nocturnal swallow, for it preys entirely in the night, or rather in the dusk of the evening, when the other swallows are retired to rest.

There is only one species known in Europe, and this is considerably larger than the swallow, being ten inches and a half in length, and in weight two ounces and a half. The ground of the plumage is

almost black, but it is beautifully diversified with ash colour and white in different parts; and it has, like all the kind, a number of bristles about the bill. It makes no nest, but lays its eggs on the bare ground, or some loose crag, without any seeming care whatever. It is a great destroyer of cock-chaffers and beetles; and its note resembles the noise of a spinning-wheel. From its nocturnal habits it has been called the Night Hawk, and the Churn Owl. It visits England about May, and returns in August. There appears to be no other ground for the ridiculous story of its sucking the goats, but the width of its mouth, which is to be accounted for on much more rational principles. "The country people (says Mr. White) have a notion that the Fern Owl, or Churn Owl, or Eve Jar, which they also call a Puckeridge, is very injurious to weaning calves, by inflicting, as it strikes at them, a fatal distemper, known to cow leeches by the name of puckeridge. Thus does this harmless, ill fated bird fall under a double imputation, which it by no means deserves—in Italy, of sucking the teats of goats, whence it is called *Caprimulgus*, and with us, of communicating a deadly disorder to cattle. The least observation and attention would convince men that these birds neither injure the goatherd nor the grazier." Mr. Waterton also has pointed out, that the "striking at the cattle," as the sapient rustics call it, is, in fact, the leap which the bird makes at the nocturnal flies which are tormenting the herd; and that, with more good sense than their masters possess, the cattle are aware of, and grateful for, the service which the bird thus renders to them.

There are about fifteen foreign species of this bird,

one of which is called the GRAND GOATSUCKER, and is the size of a small buzzard: it inhabits Cayenne.

There are a few foreign birds belonging to this order, which are not reducible to any of the preceding genera, and which, therefore, agreeably to our former practice, we introduce at the conclusion of the European birds.

THE COLY GENUS

INCLUDES about five species of foreign birds, much resembling each other in character and manners. The WHITE-BACKED COLY is an inhabitant of the Cape of Good Hope. It is in length twelve inches. The general colour of the plumage is bluish ash colour; the head is very full crested; the under parts of the body are whitish, and a stripe of pure white runs the whole way down the middle of the back. The tail is uniform, and of an immense length.

THE TANAGER

HAS been called the Red-breasted Blackbird, and the Greater Bullfinch. The genus includes about forty-five species. They are in general about the size of the canary bird, and vary in plumage according to the species and the climate. They bear much relation to the bullfinch, and are found in all the warm climates of America, north and south.

THE MANAKIN.

As the last species bears a resemblance to the bullfinch, so the Manakins may be said to bear some relation to the titmouse. They vary, however, from the size of a pigeon, to that of a small wren. The ROCK, or CRESTED MANAKIN, is about ten inches long. The general colour of the plumage is orange, and the head is covered with a beautiful double crest. This species inhabits Surinam, Cayenne, &c. It makes its nest of a few dry sticks. They are in general shy; but are sometimes rendered so tame, that they run along with the poultry.

The GOLD-HEADED MANAKIN is in the other extreme, being only three inches and a quarter long; but it is a most beautiful animal. The head and neck are of a fine golden orange, and the rest of the body, wings and tail, are of a purplish black.

CHAP. V.

*Of Waterfowl with Cloven Feet...The SPOONBILL...The HERON
 ...The Bittern...The Crane...The Egret...The Stork...The
 Crowned Crane...The Gigantic Crane...The Adjutant...The
 Demoiselle, or Buffoon Bird...The IBIS...The Bay and Egyptian
 Ibis...The CURLEW...The SNIPE...The Woodcock...The Godwit
 ...The Greenshank...The Redshank...The Jack Snipe...The
 SANDPIPER...The Lapwing...The Ruff...The Knot...The Purre
 ...The Turnstone...The Dunling...The PLOVER...The Golden
 and Long-legged Plovers...The Dotterel...The Sanderling...The
 Ringed Plover...The OYSTER CATCHER...The PRATINCOLE...The
 RAIL...The Crake...The GALLINULE...The Water Hen...The
 Spotted and Purple Gallinule...The JABIRU...The SCREAMER...
 The BOATBILL...The UMBRE...The JACANA...The SHEATHBILL...
 Waterfowl with Pinnated Feet...The PHALAROPE...The Gray
 and Red Phalarope...The COOT...The GREBE...The Crested,
 Eared, and Red-necked Grebe.*

Cloven-footed Waterfowl.

THE classification which has been adopted by Mr. Pennant, and the later naturalists, is peculiarly well calculated to prevent confusion in so numerous a list of genera and species as the description of waterfowl presents to our view. They divide them into three orders, those with cloven feet, or the crane kind; those with pinnated, or finned feet, which are much less numerous than the preceding; and those with webbed feet, or the swan or duck kind. The simplicity of this arrangement is a further recommendation; and with a few exceptions it appears a classification which completely separates animals that have scarcely any properties in common. If we except the flamingo, the avosetta, and the courier (which, though they are web-footed, certainly partake

of the nature of the crane), all the web-footed fowl are of a squat make, and of a waddling gait, with their legs placed far behind, and their necks in general disproportionably long. The make of the *waders*, or cloven-footed waterfowl, is, on the contrary, tall, light, and, in general, of pleasing proportion. Those with finned feet constitute, as it were, a middle race, being calculated both for swimming and wading, and partake of the nature of both. The cloven-footed lay their eggs on the ground, and make no nest. Those with pinnated feet form large nests in the water or near it; the web-footed fowl deposit their eggs for the most part on the lofty cliffs or inaccessible promontories.

In this division of birds, the first which modern naturalists present to our consideration is the Spoonbill, a bird remarkable for the curious form of its bill.

THE SPOONBILL.



Of the Spoonbill, which has sometimes erroneously been called the Shoveller (the real Shoveller being a bird of the duck tribe), there are three species.

The first of these is the ROSEATE SPOONBILL, which has beautiful red plumage, with a collar of black at the lower part of the neck. The third, which inhabits Guiana and Surinam, is called the DWARF SPOONBILL, and is about the size of a sparrow. Its body is brown above, and white beneath; the quills have white shafts; and the tail is rounded, short, and of a brownish white colour. The most common species, however, is the second, which bears the name of the WHITE SPOONBILL, from its plumage, except in some rare exceptions, being entirely white. This bird is about the size of a heron, but somewhat shorter in the neck and legs. The bill is more than half a foot long, and has the shape of a spoon.

"This bird," says Mr. Latham, "is found in various parts of the old continent, and from the Fero Islands, near Iceland, to the Cape of Good Hope. It frequents the neighbourhood of the sea, and has been met with on the coasts of France; at Sevenhuys, near Leyden, it was once in great plenty, annually breeding in a wood there. The nest is placed on high trees, near the seaside. The female lays three or four white eggs, powdered with a few pale red spots, and of the size of those of a hen. They are very noisy during breeding time, like our rooks; are seldom found high up the rivers, chiefly frequenting the mouths of them. Their food is fish, which they often take from other birds, in the manner of the bald eagle; also muscles and other shell fish, being found in greatest numbers where these are plenty; and they will also destroy frogs and snakes, and even grass and weeds, which grow in the water, as well as the roots of reeds. They are migratory, retiring to the warmer parts as the winter approaches, and are rarely seen in England." In

consequence of their destroying frogs, toads, and serpents, they are highly prized at the Cape of Good Hope.

On the hind part of the head of this bird is a beautiful white crest, reclining backwards; while the legs and thighs are jet black: but the wisdom of Providence is conspicuous in the conformation of the bill, which seems entirely adapted to the habits and manner of feeding of these birds; the frog and the lizard, which constitute the principal food of the Spoonbill, often escape the thin and narrow beak of the heron and others, but here the mandibles are so large at the end, that the prey cannot slip aside.

THE HERON.



OF this genus Latham has enumerated not less than eighty-two species, all differing in their size, figure, and plumage; and with talents adapted to their place of residence, or their peculiar pursuits. But how various soever the Heron kind may be in their colours or their bills, they all seem possessed of the same manners, and have but one character of cowardice, rapacity, and indolence, yet insatiable hunger.

Other birds are found to grow fat by an abundant supply of food; but these, though excessively destructive and voracious, are ever found to have lean and carrion bodies, as if not even plenty were sufficient for their support.

The COMMON HERON is remarkably light in proportion to its bulk, scarcely weighing three pounds and a half, yet it expands a breadth of wing which is five feet from tip to tip. Its bill is very long, being five inches from the point to the base; its claws are long, sharp, and the middlemost toothed like a saw. Yet, thus armed as it appears for war, it is indolent and cowardly, and flies even at the approach of a sparrowhawk. When driven to extremity, however, it shakes off its timidity, and displays both courage and skill. When its antagonist succeeds in rising above it, which is not easily done, the Heron doubles his neck backward under his wing, and turns his bill upward, like a bayonet. In this manner, he sometimes contrives to transfix even the powerful sea eagle.

Of all birds, this commits the greatest devastation in fresh water; and there is scarcely a fish, though ever so large, that he will not strike at and wound, though unable to carry it away. But the smaller fry are his chief subsistence; these, pursued by their larger fellows of the deep, are obliged to take refuge in shallow waters, where they find the Heron a still more formidable enemy. His method is to wade as far as he can go into the water, and there patiently wait the approach of his prey, which when it comes within sight, he darts upon with an inevitable aim. In this manner he is found to destroy more in a week than an otter in three months. "I have seen a Heron," says Willoughby, "that had been shot,

that had seventeen carps in his belly at once, which he will digest in six or seven hours. I have seen a carp," continues he, "taken out of a Heron's belly, nine inches and a half long. Several gentlemen who kept tame Herons, to try what quantity one of them would eat in a day, have put several smaller roach and dace in a tub; and they have found him eat fifty in a day, one day with another. In this manner a single Heron will destroy fifteen thousand carp in a single half year."



But, though in seasons of fine weather the Heron can always find a plentiful supply, in cold or stormy seasons his prey is no longer within reach; the fish that before came into shallow water now keep in the deep, as they find it to be the warmest situation. Frogs and lizards also seldom venture from their lurking places; and the Heron is obliged to support himself upon his long habits of patience, and even to take up the weeds that grow upon the water. At those times he contracts a consumptive disposition, which succeeding plenty is not able to remove; so that the meagre glutton spends his time between want and riot, and feels alternately the extremes of

famine and excess. Hence, notwithstanding the care with which he takes his prey, and the amazing quantity he devours, the Heron is always lean and emaciated; and though his crop be usually found full, yet his flesh is scarce sufficient to cover the bones.

Though this bird lives chiefly among pools and marshes, yet its nest is built on the top of the highest trees, and sometimes on cliffs hanging over the sea. They are never in flocks when they fish, committing their depredations in solitude and silence; but in making their nests they love each other's society; and they are seen, like rooks, building in company with flocks of their kind. Their nests are made of sticks, and lined with wool; and the female lays four large eggs, of a pale colour. The observable indolence of their nature, however, is not less seen in their nestling than in their habits of depredation. Nothing is more certain, and we have seen it a hundred times, than that they will not be at the trouble of building a nest when they can get one made by the rook, or deserted by the owl, already provided for them. This they usually enlarge and line within, driving off the original possessors, should they happen to renew their fruitless claims.

The Heron is said to be a very long lived bird; by Mr. Keysler's account it may exceed sixty years; and by a recent instance of one that was taken in Holland, by a hawk belonging to the Stadtholder, its longevity is again confirmed, the bird having a silver plate fastened to one leg, with an inscription, importing that it had been struck by the elector of Cologne's hawks thirty-five years before.

When falconry was in fashion, the chase of the Heron was a favourite amusement. Somerville has

described with great spirit the contest between the hawks and the Heron, and the death of the latter.

————— Now like a wearied stag,
That stands at bay, the hern provokes their rage ;
Close by his languid wing, in downy plumes
Covers his fatal beak, and cautious hides
The well dissembled fraud. The falcon darts
Like lightning from above, and in her breast
Receives the latent death ; down plum she falls
Bounding from earth, and with her trickling gore
Defiles her gaudy plumage. See, alas !
The falconer in despair, his favourite bird
Dead at his feet ; as of his dearest friend
He weeps her fate ; he meditates revenge,
He storms, he foams, he gives a loose to rage :
Nor wants he long the means ; the hern fatigued,
Borne down by numbers, yields, and prone on earth
He drops : his cruel foes wheeling around
Insult at will.



Of all the species which have been mentioned above, only three appear to be known in England, the COMMON HERON, which we have been describing, and which is blue, the WHITE HERON, and the BITTERN, or MIREDRUM.

THE BITTERN.



THOSE who have walked in an evening by the sedgy sides of unfrequented rivers, must remember a variety of notes from different waterfowl : the loud scream of the wild goose, the croaking of the mallard, the whining of the lapwing, and the tremulous neighing of the jack snipe. But of all those sounds, there is none so dismally hollow as the booming of the Bittern. It is impossible for words to give those who have not heard this evening call an adequate idea of its solemnity. It is like the interrupted bellowing of a bull, but hollower and louder, and is heard at a mile's distance, as if issuing from some formidable being that resided at the bottom of the waters.

The bird, however, that produces this terrifying sound is not so big as a heron, with a weaker bill, and not above four inches long. It differs from the heron chiefly in its colour, which is in general of a

palish yellow, spotted and barred with black. Its windpipe is fitted to produce the sound for which it is remarkable ; the lower part of it dividing into the lungs, is supplied with a thin loose membrane, that can be filled with a large body of air, and exploded at pleasure. These bellowing explosions are chiefly heard from the beginning of spring to the end of autumn ; and however awful they may seem to us, are the calls to courtship, or connubial felicity.

This bird, though of the heron kind, is yet neither so destructive nor so voracious. It is a retired, timorous animal, concealing itself in the midst of reeds and marshy places, and living upon frogs, insects, and vegetables ; and though so nearly resembling the heron in figure, yet differing much in manners and appetites. It lays its eggs in a sedgy margin, or amidst a tuft of rushes, and composes its simple habitation of sedges, the leaves of water-plants, and dry rushes. It lays generally seven or eight eggs of an ash-green colour, and in three days leads its little ones to their food. The Bitterns defend their young with such courage, that even the hawk does not often venture to attack the nest.

At the latter end of autumn, however, in the evening, the wonted indolence of the Bittern appears to forsake it. It is seen rising in a spiral ascent till it is quite lost from the view, and makes at the same time a singular noise, very different from its former boomings.

The flesh of the Bittern is greatly in esteem among the luxurious. For this reason, it is as eagerly sought after by the fowler as it is shunned by the peasant ; and as it is a heavy rising, slow-winged bird, it does not often escape him. Indeed, it seldom rises but when almost trod upon ; and

seems to seek protection rather from concealment than flight.

When wounded by the sportsman, this bird often makes a severe resistance. It does not retire; but waits the onset, and gives such vigorous pushes with its bill, as to wound the leg through the boot. Sometimes it turns on its back, like the rapacious birds, and fights with both its bill and claws. When surprised by a dog, it is said always to throw itself into this posture, and defend itself so vigorously, as to compel its assailant to retire. The eyes of its antagonist are the object at which it chiefly strikes.

THE CRANE



Is also a bird which naturalists place in the heron genus. Willoughby and Pennant make the size of this bird from five to six feet long, from the tip to the tail. Other accounts say, that it is above five feet high; and others that it is as tall as a man. A bird, however, the body of which is not larger than

that of a turkey hen, and acknowledged on all hands not to weigh above ten pounds, cannot easily be supposed to be almost as long as an ostrich. Brisson, therefore, seems to give this bird its real dimensions, when he describes it about three feet high, and about four from the tip to the tail. But, perhaps, that from which he took his dimensions was one of the smallest of the kind.

It is a tall, slender bird, with a long neck and long legs. The top of the head is covered with black bristles, and the back of it is bald and red, which sufficiently distinguishes this bird from the stork, to which it is very nearly allied in size and figure. The plumage, in general, is ash coloured; and there are two large tufts of feathers that spring from the pinion of each wing. These bear a resemblance to hair, and are finely curled at the ends, which the bird has a power of erecting and depressing at pleasure. Gesner says, that these feathers, in his time, used to be set in gold, and worn as ornaments in caps.

The Crane is a very social bird, and they are seldom seen alone. Their usual method of flying or sitting is in flocks of fifty or sixty together; and while a part feed, the rest stand like sentinels upon duty. It for the most part subsists upon vegetables; and is known in every country of Europe, except England. As they are birds of passage, they are seen to depart and return regularly at those seasons when their provision invites or repels them. They generally leave Europe about the latter end of autumn, and return in the beginning of summer. In the inland parts of the continent, they are seen crossing the country, in flocks of fifty or a hundred, making from the northern regions towards the south.

In these migrations, however, they are not so resolutely bent upon going forward, but that if a field of corn offers in their way, they will stop a while to regale upon it: on such occasions they do incredible damage, chiefly in the night; and the husbandman, who lies down in joyful expectation, rises in the morning to see his fields laid entirely waste, by an enemy whose march is too swift for his vengeance to overtake.

The cold arctic region seems to be this bird's favourite abode. They come down into the more southern parts of Europe rather as visitants than inhabitants.

In their journeys it is amazing to conceive the heights to which they ascend when they fly. Their note is the loudest of all birds; and is often heard in the clouds, when the bird itself is entirely unseen. As it is light for its size, and spreads a large expanse of wing, it is capable of floating, at the greatest heights, where the air is lightest; and as it secures its safety, and is entirely out of the reach of man, it flies in tracks which would be too fatiguing for any other birds to move forward in.

In these aerial journeys, though unseen themselves, they have the distinctest vision of every object below. They govern and direct their flight by their cries; and exhort each other to proceed or descend, when a fit opportunity offers for depredation. As they rise but heavily, they are very shy birds, and seldom let the fowler approach them. Corn is their favourite food; but there is scarcely any other that comes amiss to them. Redi, who opened several, found the stomach of one full of the herb called dandelion; that of another was filled with beans; a third had a great quantity of clover

in its stomach; while those of two others were filled with earth-worms and beetles: in some he found lizards and seafish; in others, snails, grass, and pebbles, swallowed perhaps for medicinal purposes.

In general it is a peaceful bird, both in its own society, and with respect to those of the forest. It is an animal easily tamed; and, if we can believe Albertus Magnus, has a particular affection for man.

THE EGRET

Is of the crane kind, but only one species is known in Europe, which is called the LITTLE EGRET. It is the size of a fowl. The hind head is crested, and two of the feathers, which are five inches in length, hang gracefully behind. The whole plumage is of a beautiful white, and the elegance of the bird is much increased by the long, loose feathers which cover and hang over the rump: their flesh is said to be excellent. It is conjectured that both the crane and Egret were formerly inhabitants of Great Britain; but this can hardly be said of them at present, notwithstanding a solitary instance or two of their having been shot there. In America there are Egrets found of a reddish, and some of a black colour; but they differ in no other respect from the European.

THE STORK.

THE most remarkable of this species is the White Stork, the length of which is about three feet. The bill is nearly eight inches long, and of a fine red colour. The plumage is wholly white; except the

orbits of the eyes, which are bare and blackish: some of the feathers on the side of the back and on the wings are black. The skin, the legs, and the bare parts of the thighs, are red.

The White Stork is semidomestic; haunting towns



and cities, and in many places stalking unconcernedly about the streets, in search of offal and other food. They remove the noxious filth, and clear the fields of serpents and reptiles. On this account they are protected in Holland, held in high veneration by the Mahometans, and so greatly were they respected in times of old by the Thessalonians, that to kill one of these birds was a crime expiable only by death. The ancients, indeed, ascribed to it the virtues of temperance, conjugal fidelity, and filial and paternal piety.

The disposition of this bird is mild, neither shy nor savage: it is easily tamed, and may be trained to reside in gardens, which it will clear of insects and reptiles. It has a grave air and a mournful visage: yet, when roused by example, it shows a certain degree of gaiety; for it joins in the frolics of children, by imitating them. Dr. Herman tells us

blackish pencils. This bird comes from the coast of Africa and the Cape de Verd Islands. It grows



to the height of four feet. As it runs, it stretches out its wings, and goes very swiftly, otherwise its usual motion is very slow. In their domestic state, they walk very deliberately among other poultry, and suffer themselves to be approached by every spectator. They never roost in houses: but about night, when they are disposed to go to rest, they search out some high wall, on which they perch in the manner of a peacock. Indeed, they so much resemble that bird in manners and disposition, that some have described them by the name of the Sea Peacock. But though their voice and roosting be similar, their food, which is entirely greens, vegetables, and barley, seems to make some difference.

THE GIGANTIC CRANE.

THIS bird is much larger than the former, measuring from tip to tip of the wings nearly fifteen feet, and frequently measuring seven feet and a half when standing erect. The bill is of a vast size, nearly triangular, and sixteen inches round at the base. The head and neck are naked, except a few straggling curled hairs. The feathers of the back and wings are of a bluish ash colour, and very stout; those of the breast are long. The craw hangs down the fore part of the neck like a pouch. The belly is covered with a dirty white down; and the upper part of the back and shoulders are surrounded with the same. The legs and half the thighs are naked; and the naked parts are full three feet in length.

This bird is an inhabitant of Bengal and Calcutta, and is sometimes found on the coast of Guinea. It arrives in the internal parts of Bengal before the period of the rains, and retires as soon as the dry season commences. It has a filthy and disgusting aspect, yet it is one of the most useful birds of those countries, in freeing them of snakes and noxious reptiles and insects. It seems to finish the work begun by the jackal and vulture: they clearing away the flesh of animals, and these birds removing the bones by swallowing them entire. They sometimes feed on fish: and one of them will generally devour as much as would serve four men. In the craw of a Crane of this species has been found a land tortoise ten inches long, and in its stomach a large black cat.

Gigantic Cranes are found in companies; and when seen at a distance, near the mouths of rivers, coming towards an observer (which they do with

their wings extended), it is said that they may easily be mistaken for canoes on the surface of a smooth sea; and when on the sandbanks, for men and women picking up shell fish on the beach. The Indians believe them to be invulnerable, and animated by the souls of the deceased Bramins. In Africa they are equally venerated. They are not difficult to be tamed, and will become very familiar.

The WATTLED HERON is a very curious bird. The top of the head is blue gray, the rest of the head and neck white; under the chin are two wattles covered with white feathers. The back and wings are blue gray, and the quills and belly are black. This bird is a native of Africa.

THE ADJUTANT.



THIS bird is of the Heron tribe, and, according to the Linnæan system, belongs to the order of Waders. It has been brought from Botany Bay within these few years, and two of them were exhibited at the menagerie in Exeter Change. In its appearance

there is something singular. Under the chin is a kind of purse or bag, which seems adapted to receive the water that they swallow with their food. This connects it, in some degree, with the pelican. There is neither hair, feather, nor down on the head, which looks as if it were made of wood; and this oddity is heightened by the eye seeming to be set in it, as if without lids or any cartilaginous appendages. The beak is equally anomalous; it is composed of two long sticks, apparently as of wood, with which the bird makes a loud chattering noise, in order to clean them. The covert of the wings and back are black, with a bluish tint; the under part of the body is whitish; the legs are long, unfeathered, and of a grayish hue; the thighs, which seem to be as slender as the leg, are the same; and the articulation between the tibia and the femur is very obvious, and larger than in any other bird of the kind. The neck also is devoid of feathers, like that of the ostrich, and is of a flesh colour.

One bird more may be subjoined to this genus, not for the oddity of its figure, but the peculiarity of its manners. It is vulgarly called by our sailors the *Buffoon* bird, and by the French the *Demoiselle*, or lady. The peculiar gestures and contortions of this bird, the proper name of which is the NUMIDIAN CRANE, are extremely singular. It stoops, rises, lifts one wing, then another, turns round, sails forwards, then back again; all which highly diverts our seamen; not imagining, perhaps, that all these contortions are but the awkward expression not of the poor animal's pleasures, but its fears.

It is a very scarce bird; the plumage is of a leaden gray, but it is distinguished by fine white feathers, consisting of long fibres, which fall from the back of

the head, about four inches long; while the fore part of the neck is adorned with black feathers, composed of very fine, soft, and long fibres, that hang down upon the stomach, and give the bird a very graceful appearance.

THE IBIS

SCARCELY deserves the name of a European bird, since only one species is found there, viz. the BAY IBIS, which is not larger than a curlew, or one foot nine inches long. The upper parts of the body are glossy green, and the lower parts are brown, with a gloss of gold on the breast. It inhabits Italy, some parts of Germany, and about the Caspian and Black Seas.

The EGYPTIAN IBIS, so famous in history and mythology, is larger than the stork, measuring from thirty to forty inches in length. The bill is seven inches long, is slightly curved, and ends in a blunt point. The plumage is a reddish white, most inclining to red on the back and wings. It is found in great numbers in Lower Egypt, in places just freed from the inundations of the Nile, where it is of signal service in destroying insects, reptiles, &c. This bird is frequently found in the sepulchres along with the mummies, and was formerly held sacred by the Egyptians.

The BLACK-FACED IBIS is in length about twenty-eight inches. The whole face quite beyond the eyes is bare of feathers, black, and warty, and under the chin hangs a loose, wrinkled skin, forming a pouch. The head, neck, and breast are yellow, with a bar of ash colour across the latter; the rest of the body is ash colour. It was found on New Year's Island, near Staten Land.

THE CURLEW



Is a well known bird, which in winter frequents our seacoasts and marshes, feeding chiefly on frogs and marine insects. In summer they retire to the mountainous and unfrequented parts to breed. Their flesh is rank and fishy. Curlews differ much in size, some weighing thirty-seven ounces, and some not twenty-two; the length of the largest is twenty-five inches. Its bill is long, black, and much curved. The upper parts of the plumage are of a pale brown; the breast and belly white, marked with dark oblong spots. The female is somewhat larger than the male, which is commonly called the Jack Curlew, and the spots with which she is covered almost all over are more inclining to a red. Latham enumerates about eleven species, foreign and domestic.

THE SNIPE GENUS

INCLUDES better than thirty species. Of these the WOODCOCK is the most esteemed by the epicures. During the summer, the Woodcock inhabits and breeds in Norway, Sweden, Lapland, and other countries in the north; but on the commencement

of the frost it begins to migrate southward. A few of these birds reach us in October, but the main body does not arrive till November or December; and they are often much exhausted by their journey. They have recently been more scarce in England, in consequence, it is supposed, of their eggs having become an article of luxury in Sweden. The greater part of them leave us at the close of February or the beginning of March, after having paired; but they are sometimes detained for a while longer by the wind being adverse.

The Woodcock is about as large as a pigeon, with



a bill three inches long. The crown of the head and back of the neck are barred with black, and a black streak runs from the bill to the eyes. It flaps its wings with some noise when it rises, and its flight is pretty rapid, but neither high nor long; and its descent is so sudden that it seems to fall like a stone. It flies very straight in a wood of tall trees, but in a copse it is often obliged to wind, and frequently drops behind bushes, to conceal itself from the eye of the fowler. It principally feeds on worms and insects, which it draws out of the mud with its long bill; and its flesh is universally admired. The female builds a rude nest on the ground, and generally lays four or five eggs. She is remarkably tame during incubation.

THE GODWIT



WEIGHS twelve ounces and a half, and is in length sixteen inches. From the bill to the eye is a broad white stroke. The plumage on the upper parts is of a light reddish brown, the belly white; the quills are blackish. They are taken in the fens, and when fattened are esteemed a great delicacy. In some places they are called the Stone Plover. They are exceedingly timid, and hurry to shelter when tempestuous weather approaches. The RED GODWIT is larger, but less common in England.

The GREENSHANK is not so common as the godwit: it is about fourteen inches in length; the bill two inches and a half long. The plumage on the upper parts is a brown ash colour; on the lower parts white: the legs are green, whence it takes its name. It has the same manners and character as the godwit, and has also a white line over the eye; but does not weigh more than half as much.

THE REDSHANK

WEIGHS about five ounces and a half, and is twelve inches long. The bill is two inches, red at the base, and black towards the point. The head, neck, and

scapulars are dusky ash colour, obscurely spotted with black: the back is white, spotted with black: the breast is white, streaked with dusky lines. The



tail is elegantly barred with black and white; and the legs, which are long, are of a bright orange colour, whence the bird derives its name. When its nest is in danger, it makes a noise somewhat similar to that of the lapwing. In the winter time it conceals itself in the gutters. It breeds in fens and marshes.

THE SNIPE.



SNIPES are migratory birds, which are supposed to breed chiefly in the lower lands of Germany and Switzerland. They visit us in autumn, and retire in the spring. Many, however, remain with us the whole year, and make their nests of dried grass and feathers, in the most inaccessible parts of marshes.

One variety of this bird, of a smaller size, is called the JACK SNIPE. Their food consists of small worms, slugs, and the larvæ of insects. During the breeding season, while it plays over the moors, this bird makes a pleasing humming and piping sound. Their flesh is justly reckoned among feathered dainties.

From the point of the bill to the end of the tail the Snipe measures about twelve inches, and from the point of each wing, when extended, about fifteen or sixteen: the head is divided longways by a pale red line, parallel to which on each side is a black line, and over the eyes there runs another line pretty much of the same colour as that on the middle of the head. The feathers that spring from the shoulders reach almost as far as the end of the tail, the outward half from the shaft being of a pale red. The colours thus succeeding each other make two lines down the back, the covert feathers of which are dusky, with white transverse lines, and white tips on some of the large wing feathers, the lesser feathers being of a mixed colour of red, black, and gray, beautifully variegated with white and brown lines running across them. The bill is black at the tip, and near three inches long; the tongue is sharp; the eyes of a hazel colour. The legs are of a pale greenish colour, the toes pretty long, and the talons black.

About thirty years ago Snipes are said to have been so abundant in the fens of Cambridgeshire, that a single man, in one night, took as many of them with a lark net as were sufficient to fill a hamper.

The Jack Snipe has a more swift and direct flight than the common species. As it will not rise till it is almost trodden on, the French sportsmen give to it the appellation of *la sourde*, or *deaf*.

THE SANDPIPER GENUS

INCLUDES, of well known birds, the LAPWING, the RUFF, the KNOT, the PURRE, the TURNSTONE, and the DUNLING.

THE LAPWING, OR PEEWIT.



THE Lapwing, or Bastard Plover, is about the size of a common pigeon, and is covered with very thick plumes, which are black at the roots, but of a different colour on the outward part. The feathers on the belly, thighs, and under the wings, are most of them white as snow: and the under part on the outside of the wings white, but black lower. The back is of a dark green, glossed with blue shades. The head and crest are black, and the latter, which is composed of unwebbed feathers, is almost four inches in length. It has a great liver, divided into two parts, and, as some authors affirm, no gall.

Lapwings are found in most parts of Europe, as far northward as Iceland. In the winter they are met with in Persia and Egypt. Their chief food is worms; and sometimes they may be seen in flocks nearly covering the low marshy grounds in search of these, which they draw with great dexterity from

their holes. When the bird meets with one of these little clusters of pellets, or rolls of earth, that are thrown out by the worm's perforations, it first gently removes the mould from the mouth of the hole, then strikes the ground at the side with its foot, and attentively waits the issue: alarmed by the shock, the reptile emerges from its retreat, and is instantly seized. In the evening they adopt another mode. They then run along the grass, and feel with their feet the worms which the dampness of the atmosphere has brought forth.

These birds make a great noise with their wings in flying, and are called Peewits, or Tewits, in the north of England, from their particular cry. They remain here the whole year. The female lays two eggs on the dry ground, near some marsh, upon a little bed which she prepares of dry grass. These are olive-coloured, and spotted with black. She sits about three weeks; and the young, who are covered with a thick down, are able to run within two or three days after they are hatched. The parent displays the fondest attachment to them, and employs innumerable interesting stratagems to avert approaching danger from them. "She does not wait the arrival of her enemies at the nest, but boldly pushes out to meet them. When she has approached as near as she dare venture, she rises from the ground with a loud screaming voice, as if just flushed from hatching, though probably she is not at the time within a hundred yards of her nest. She now flies with great clamour and apparent anxiety; whining and screaming round the invaders, striking at them with her wings, and sometimes fluttering as if she was wounded. To complete the deception, she becomes still more clamorous as she retires from the

nest. If very near, she appears altogether unconcerned; and her cries cease in proportion as her fears are augmented. When approached by dogs, she flies heavily, at a little distance before them, as if maimed; still vociferous, and still bold, but never offering to move towards the quarter where her young ones are stationed. The dogs pursue, in expectation every moment of seizing the parent, and by this means actually lose the offspring; for the cunning bird, having thus drawn them off to a proper distance, exerts her powers, and leaves her astonished pursuers to gaze at the rapidity of her flight." The Lapwing may be domesticated, and it then becomes uncommonly familiar and confiding.

THE RUFF



Is a bird not so generally known as the lapwing, it being confined to the north of Europe during the summer, and in England only visiting certain parts, viz. Lincolnshire, the Isle of Ely, and the adjacent parts of Yorkshire, in the spring. The male, which is called the RUFF, from the remarkable bunch of feathers which surrounds its neck just below the head, is so various in its plumage, that it is not

easily described; the ground is, however, mostly brown, and barred with black. The female, which is called the REEVE, is less than the Ruff, and has her plumage more of a uniform brown. This bird is so noted for its contentious spirit, that it has obtained the epithet of the fighter. In the beginning of spring, when these birds arrive among our marshes, they are observed to engage, with desperate fury, against each other. It is then that the fowlers, seeing them intent on mutual destruction, spread their nets over them, and take them in great numbers; yet, even in captivity, their animosity still continues. The people that fatten them for sale are obliged to shut them up in close dark rooms; for if they let ever so little light in among them, the turbulent prisoners instantly fall to fighting with each other, and never cease till each has killed its antagonist, especially, says Willoughby, if any body stands by. A similar animosity, though in less degree, prompts all this tribe; but when they have paired, and begun to lay, their contentions are then over.

THE KNOT



Is three inches less than the ruff, measuring not more than nine inches, and weighing only four ounces and a half. The head and neck are ash

colour; the back and scapulars brown, with a white bar on the wings. They frequent the coast of Lincolnshire from August to November, and when fattened are preferred by some to the ruffs themselves. Camden deduces their name from King Canute, or Knute, with whom they were a favourite dish.

The PURRE, or STINT, weighs only an ounce and a half, and is in length seven inches. A white stroke divides the bill and eyes. The upper parts of the plumage are brownish ash colour, the breast and belly white, as are the lower parts of the quill feathers. These birds come in vast flocks on our seacoasts in winter, and in their flight observe uncommon regularity, appearing like a white or a dusky cloud, according as they turn their backs or their breasts towards us. They were formerly a frequent dish at our tables, known by the name of Stints.

The TURNSTONE is about the size of a thrush. The bill is nearly an inch long, and turns a little upwards. The head, throat, and belly, are white; the breast black; and the neck encircled with a black collar. The upper parts of the plumage are of a pale reddish brown. These birds take their name from their method of finding their food, which is by turning up small stones with their bills, to get at the insects which lurk under them. Catesby saw one of them rapidly turn over stones of three pounds weight, though it moved only the upper mandible.

The DUNLING is the size of a jack snipe. The upper parts of the neck and back are ferruginous, marked with large spots of black; the lower part of the neck is white, with dusky streaks; the belly is white, dotted with large black spots; the tail and the coverts of the wings are ash-coloured; and the legs are black. It is found in all the northern parts of Europe, but is rarely seen on our coasts.

Of the SANDPIPER, properly so called, there are about twelve species known in Europe, from the size of a thrush to that of a hedge-sparrow. The Common Sandpiper, which is a solitary bird, is in weight about two ounces: the head is brown, streaked with black, the back and coverts brown, mixed with glossy green; the breast and belly pure white. Its note is louder and more piping than others of this genus. It frequents rivers, lakes, and meres, and is never found near the sea. The BLACK, the GREEN, the SPOTTED, the RED, and the GAMBEL SANDPIPER, are not very common in England.

The genus includes forty species, foreign and domestic.

THE PLOVER.

UNDER the description of Plover about twenty-four species are comprehended.

The GOLDEN, or GREEN PLOVER, is a well known bird, and is found in small flocks, in the winter time, on all our moors, heaths, &c. where it feeds chiefly on worms. It is remarkable for the whole of its plumage being elegantly variegated with a fine, yellowish green. From its spots somewhat resembling those of a leopard, the ancients called it *Pardalis*. It may be enticed within gunshot, by a skilful imitator of their voice, and is esteemed as a delicacy. It is eleven inches in length, weighs nine ounces, and is found in France, Switzerland, Italy, and most parts of England.

THE LONG-LEGGED PLOVER.

THIS singular bird we might, perhaps, justly say most singular of birds, inhabits the south of Europe, Asia, Africa, and America, but very rarely visits England.

Chance alone seems to drive it to this country. It has a slender, black bill, two inches and a half in length; the irides are red; the forehead, round the eye, and all the under parts, are white; the back,



the crown of the head, and the wings, are glossy black; the hind part of the neck is marked with dusky spots; the rump is white; the tail the same, inclining to gray; the outer feathers are quite white, the legs red; and the outer and middle toes connected at the base.

But the circumstance which makes this bird differ from all others is the astonishing and seemingly preposterous length of its legs. Mr. White has given a very pleasing description of this natural curiosity. "In the last week of April, 1779," says he, "five of these most rare birds were shot upon the verge of Frensham pond; a large lake between Woolmer Forest and Farnham. One of these specimens I procured, and found the length of the legs to be so extraordinary, that, at first sight, one might have supposed the shanks had been fastened on, to impose on the credulity of the beholder: they were legs in caricature; and had we seen such proportions on a Chinese or Japan screen, we should have made large allowance for the *fancy* of the draughtsman.

"The birds might with propriety be called the Stilt Plovers. My specimen, when drawn and stuffed

with pepper, weighed only four ounces and a quarter, though the *naked* part of the thigh measured three inches and a half. Hence we may safely assert, that these birds exhibit weight for inches, and have incomparably the greatest length of legs of any known bird. The Flamingo, for instance, is one of the most long-legged birds, and yet it bears no manner of proportion to the Himantopus, as this bird is denominated by naturalists; for a cock Flamingo weighs, at an average, about four pounds avoirdupois; and his legs and thighs measure usually about twenty inches. But four pounds are fifteen and a fraction times more than four ounces and a quarter; and if four ounces and a quarter have eight inches of legs, four pounds must have one hundred and twenty inches and a fraction of legs, or somewhat more than ten feet; such a monstrous proportion as the world never saw. If we try the experiment in still larger birds the disparity will increase.

“It must be matter of great curiosity to see the Stilt Plover move; to observe how it can wield such a length of lever with such feeble muscles as the thighs seem to be furnished with. At best, one should expect it to be a bad walker: but what adds to the wonder is that it has no back toe. Now, without that steady prop to support its steps, it must, theoretically, be liable to perpetual vacillations, and seldom able to preserve the true centre of gravity.”

THE DOTTEREL

Is about ten inches in length, and weighs four ounces. The bill is shorter than that of the majority of this genus, being only an inch long. The head is black, spotted with white, and a white stroke runs over each eye meeting behind. The upper parts of the

plumage are grayish brown margined with a dull deep yellow. The breast is a dull orange, and across it is a streak of white margined above with black.



The colours of the female are less vivid. It is esteemed a very foolish bird; and was believed to mimick the actions of the fowler, to stretch out a wing when he stretched out an arm, &c. regardless of the net which was spreading for it. They appear in England in small flocks from April to September.

The SANDERLING is eight inches long, but weighs only an ounce and three quarters. The bill is very weak and black, and an inch long. The head and neck are ash coloured streaked with black; the wings and back brownish gray edged with white; all the under parts of the body are white. It is found in many parts of both continents, and is very plenty on the coasts of Lancashire and Cornwall.

The RINGED PLOVER is seven inches and a half long, though it weighs but two ounces; the bill is half an inch long, and from it to the eyes runs a black line. The upper part of the neck is encircled with a white collar, the lower part with a black one. The back and wings are light brown, the breast and belly are white, the legs yellow. They frequent our shores in summer, and are sometimes known by the name of the Sea Lark.

THE OYSTER CATCHER

Is about the size of a crow, weighs sixteen ounces, and is well known on our coasts under the name of the Sea-pie. Its bill is three inches in length, and of an orange colour. The head, neck, back, and quills are black, except a crescent of white, which runs across the throat; the belly, rump, and greater wing coverts are also white, and the tip of the tail black. Its nest consists of a few lichens, on rocks or gravel. It receives its name from its feeding upon shell fish, and particularly oysters, which when it observes on any occasion gaping wide enough for the insertion of its bill, it thrusts it in, and without further ceremony deprives the shell of its inhabitant. We know of but one species, which is diffused over all quarters of the globe.

These five last genera have a strong affinity with each other, and all are distinguished by similar manners. As they are usually employed rather in running than in flying, and as their food lies entirely upon the ground, and not on trees, or in the air, so they run with great swiftness for their size, and the length of their legs assists their velocity. But as, in seeking their food, they are often obliged to change their station, so also they are equally swift of wing, and traverse immense tracts of country without much fatigue.

It has been thought by some, that a part of these birds lived upon an oily slime, found in the bottoms of ditches and of weedy pools; but later discoveries have shown, that, in these places, they hunt for the caterpillars, worms, and insects. The long billed birds suck up worms and insects from the bottom;

those furnished with shorter bills pick up such insects as lie nearer the surface of the meadow, or among the sands on the sea-shore.

As all of this kind live entirely in waters, and among watery places, they seem provided by nature with a warmth of constitution to fit them for that cold element. They reside, by choice, in the coldest climates; and, as other birds migrate here in our summer, their migrations hither are mostly in the winter. Even those that reside among us the whole season, retire in summer to the tops of our bleakest mountains; where they breed, and bring down their young when the cold weather sets in.

The curlew, the woodcock, the snipe, the godwit, the golden, and the long legged plover, the knot, and the turnstone, are rather the guests than the natives of this island, though the nest of a straggling curlew, or a snipe, is sometimes found in our marshes. They visit us in the beginning of winter, and forsake us in the spring. They then retire to the mountains of Sweden, Poland, Prussia, and Lapland, to breed. Our country, during the summer season, becomes uninhabitable to them. The ground parched up by the heat, the springs dried away, and the vermicular insects already upon the wing, they have no means of subsisting. Their weak and delicately-pointed bills are unfit to dig into a resisting soil; and their prey is departed, though they were able to reach its retreats. Thus, that season when nature is said to teem with life, and to put on her gayest liveries, is to them an interval of sterility and famine.

The lapwing, the ruff, the redshank, the sand-piper, the oyster catcher, and the ringed plover, breed in this country, and, for the most part, reside here. In summer, they frequent such marshes as

are not dried up in any part of the year ; the Essex hundreds, and the fens of Lincolnshire. There, in solitudes formed by surrounding marshes, they breed and bring up their young. In winter, they come down from their retreats, rendered uninhabitable by the flooding of the waters, and seek their food about our ditches and marshy meadow-grounds. Yet, even of this class, all are wanderers upon some occasions, and take wing to the northern climates, to breed, and find subsistence. This happens when our summers are peculiarly dry, and when the fenny countries are not sufficiently watered to defend their retreats.

As all these birds run and feed upon the ground, so they are all found to nestle there. The number of eggs generally to be seen in every nest, is from two to four; never under, and very seldom exceeding. The nest is made without any art; but the eggs are either laid in some little depression of the earth, or on a few bents and long grass, that scarcely preserve them from the moisture below. The place these birds chiefly choose to breed in, is in some islands surrounded with sedgy moors, where men seldom resort; and in such situations, we have often seen the ground so strewn with eggs and nests, that one could scarce take a step without treading upon some of them.

THE PRATINCOLE.

ONLY three species of the Pratincole are known by naturalists, with some varieties. That which is called the AUSTRIAN PRATINCOLE is the size of a blackbird, with a short curved bill. The upper parts of the body are grayish brown, and the throat is white,

surrounded with a black line, which commences at each eye. The tail is forked. It is an inhabitant of Germany, where there is also a spotted kind. It has been called by foreign naturalists the Sea Partridge.

THE RAIL.

Of the Rail there are about twenty-two species foreign and domestic.

THE WATER RAIL, BROOK OUZEL, OR WATER OUZEL,



Is a bird well known in these parts of Europe. It is a large slender bird, with a black bill one inch and three quarters long. Its weight is four ounces and a half. The upper parts of the plumage are black, edged with olive brown, the lower parts ash coloured.

This bird frequents the banks of springs or brooks, which it never leaves; preferring the limpid streams whose fall is rapid, and whose bed is broken with stones and fragments of rocks. The habits of the Water Ouzel are very singular. Aquatic birds with palmated feet swim or dive; those which inhabit the shores, without wetting their body, wade with their tall legs; but the Water Ouzel, which, it must be remembered, is neither a wader nor a diver, but one of the passerine birds, walks quite into the flood, following the declivity of the ground. It is observed

to enter by degrees, till the water reaches its neck; and it still advances, holding its head not higher than usual, though completely immersed. It continues to walk under the water; and even descends to the bottom, where it saunters as on dry land. M. Herbert, who watched one immersing itself in the Lake of Nantua, and who communicated the fact to M. de Buffon, says, "I perceived several times, that as often as it waded deeper than the knee, it displayed its wings, and allowed them to hang to the ground. I remarked, too, that, when I could discern it at the bottom of the water, it appeared enveloped with air, which gave it a brilliant surface, like that on some sorts of beetles, which in water are always enclosed in a bubble of air. Its view, in dropping its wings on entering the water, might be to confine this air; it was certainly never without some, and it seemed to quiver." It is a curious fact that even the young ones, before they are quite feathered, are able to make their way under water, the same as the older birds.

These birds are found in many parts of Europe. The female makes her nest on the ground, in some mossy bank near the water, of hay and dried fibres, lining it with dry oak leaves, and forming to it a portico or entrance of moss. The nest is in its colour so closely similar to that of the surrounding objects that it is almost impossible to discover it except when the bird is entering. The eggs are five in number; white, tinged with a fine blush of red. It will sometimes pick up insects at the edge of the water. When disturbed, it usually flirts up its tail, and makes a chirping noise. Its song in spring is said to be very pretty. In some places it is supposed to be migratory.

The **CRAKE** is a bird well known in many parts of Great Britain, but it is still more common in Ireland. In shape it much resembles the water rail, and was once erroneously supposed to be the same bird, differing only by a change of colour, at a certain season of the year. The bill, however, in this species is short and thick, exactly resembling in shape that of the common gallinule or water hen, from which it however differs, not only in its plumage, which is a reddish brown, but in its habits, as it never frequents watery places, but is always found in grass, corn, or furze. With us it is a bird of passage, and on its first arrival about April, is very lean, not weighing more than six ounces; but before its departure it weighs more than eight. The flesh is good food.

THE GALLINULE

INCLUDES about twenty-two species, of which only five or six are common to Europe, and but three are known in Great Britain.

THE WATER HEN.



THIS race is considered by naturalists as the tribe which unites the order of the Swimmers with that of the Waders; for although they have long legs

and necks like the latter, yet by being furnished with a slight membrane between their toes, they are enabled to swim like the former; the principal of them are the Water-hen, Moor-hen or Gallinule, and the Coots; these, though placed in different classes by those who are fond of nice distinctions, may be said perfectly to resemble each other in figure, feathers, and habits; they both have long legs, with thighs almost bare of hair or feathers: their necks are rather long in proportion; their wings short, as are their bills, which are very weak; their general colour is black, and their forehead bald and without feathers. Such are their similarities; and their slight differences are, first, in size, the Water-hen weighing but fifteen ounces, and the Coot twenty-four. The bald part of the forehead in the Coot is black, in the Water-hen it is of a pink colour. The toes of the Water-hen are edged with a straight membrane; those of the Coot have it scalloped and broader. In shape and figure their differences are very trifling, and, if possible, their manner of living is still more so.

Birds of the crane kind are furnished with long wings, and can easily change place, but the Water-hen, whose wings are short, is obliged to reside entirely near those places where her food lies: she cannot take those journeys that most of the crane kind are seen to perform; compelled by her natural imperfections, as well perhaps as by inclination, she never leaves the side of the pond or the river in which she seeks her provision. She builds her nest upon low trees and shrubs, of sticks and fibres, by the water-side. Her eggs, which are seven in number, are sharp at one end, white, with a tincture of green spotted with red. She lays twice or thrice in a summer; her young ones swim the moment they

leave the egg, pursue their parent, and imitate all her manners. She rears in this manner two or three broods in a season; and when the young are grown up, she drives them off to shift for themselves. In flying the Water-hen hangs down its legs, and in running it often flirts up its tail, so as to show the white feathers.

The SPOTTED GALLINULE is a less common bird: and in Russia and some other parts of Europe a species is found, which from its colour, is called the PURPLE GALLINULE, which is the size of a common fowl.

Of the foreign birds of this order, it is proper to mention the JABIRU, or MYCTERIA, of India and of Guiana.

In multiplying the reptile tribes, which swarm upon those watery tracks that border on the Amazons or Oronoco, nature, at the same time, has not only multiplied those birds which are their destroyers, but also proportioned their size and strength to those of the enormous serpents they are to devour. The American Jabiru, one of the largest birds in Guiana, is evidently destined for this purpose: it is more than four feet high; it is six in length, from the tip of the beak to that of the claws, and is entitled to the first rank in the order of waders. The large black bill of this bird is a formidable weapon, being above thirteen inches long, and, at the base, three in thickness. It is upon a large head; is supported by strong muscles inserted in its base; and consists of a horny substance, bent upwards at the top. The head and two-thirds of the neck of the Jabiru, are covered with a black and naked skin, thinly interspersed with a few gray hairs. The plumage on the

lower part of the neck is red, and gives the bird the appearance of wearing a large collar, while it affords a fine contrast with the rest of the plumage, which is pure white. These birds grow fat in the rainy season, and are then killed by the natives, who reckon them good eating. The species is gregarious and migratory; it feeds on fishes chiefly, which it devours in large quantities; builds in trees hanging over the water, and lays two eggs.

The ASIATIC JABIRU is white, with the lower part of the back, quill, and tail feathers black. It feeds on shell fishes. There is a species in New Holland; of which the upper part of the body is a purplish green; the head purplish, spotted with white; and the under part of the body, and the neck and shoulders, white.

A bird still more extraordinary is included in this order, called the ANHIMA, or SCREAMER, and like the former, a native of Brazil. This is a water-fowl of the rapacious kind, and bigger than a swan. The head, which is small for the size of the body, bears a black bill, which is not above two inches long; but what distinguishes it in particular is a horn growing from the forehead as long as the bill, and bending forward like that of the fabulous unicorn of the ancients. This horn is not much thicker than a crow-quill, as round as if it were turned in a lathe, and of an ivory colour. But this is not the only instrument of battle this formidable bird carries; it seems to be armed at all points; for at the forepart of each wing, at the second joint, spring two straight triangular spurs, about as thick as one's little finger: the foremost of these goads or spurs is above an inch long; the hinder is shorter, and both of a dusky

colour. The claws also are long and sharp; the colour is a mixed black, gray, and white, with a little yellow in some places; and they make a very loud noise, often repeating the notes *wyhu, wyhu*. They are never found alone, but always in pairs; the cock and hen prowl together; and their fidelity is said to be such, that when one dies, the other never departs from the carcass, but dies with its companion. It makes its nest of clay, near the bodies of trees, upon the ground, of the shape of an oven. There is another species of Screamer which is crested and without the horn.

THE BOATBILL

Is also a native of America. It is about the size of a common fowl. The general colour of the bill is dusky, and the skin beneath the under jaw is capable of distention. From the hind head springs a long black crest. The plumage on the forehead is white, and the rest of the bird is a pale bluish ash colour; and the feathers which hang over the breast, are loose, like those of the heron. There are varieties of this bird, both spotted and brown, but they appear simple varieties, and not at all entitled to the denomination of species. Like the kingfisher, it preys upon fish, by perching on trees which overhang the streams, and dropping on the fish as they swim by it. It has also been thought to live on crabs, whence its Linnæan epithet, *Cancrophaga*.

THE UMBRE

Is the size of a crow, and not much differing in colour, as it is of a deep brown, or umbre. The bill is three inches and a half in length, with a furrow on each

side the upper mandible, and from the head springs a large crest of loose feathers, better than four inches in length. The bird now described came from the Cape of Good Hope. We know of but one species.

THE JACANA

Is found in most of the tropical climates, but is most common in South America. It is remarkable for the length of its toes, and for the wings being armed in front with sharp spurs. There are about ten species differing in size from that of a common fowl to that of a water-rail. They vary also in their plumage, some being brown, some black, and some variable. The FAITHFUL JACANA is a most useful bird at Carthage in South America, where it inhabits the rivers and inundated places. The natives, who keep poultry in great numbers, have one of these tame, who attends the flock as a shepherd, to defend them from birds of prey. Though not larger than a dunghill cock, the Jacana is able, by means of the spurs on his wings, to keep off birds as large as the carrion vulture, and even that bird himself; and it never deserts its charge, but assiduously takes care to bring the whole flock home safe at night. It feeds on vegetables; its gait is slow; and it cannot run but by the help of its wings, though it flies easily and swiftly. When its skin is touched a crackling is felt. Adults it will allow to handle it, but not children.

THE SHEATHBILL

Is an inhabitant of New Zealand and the South Sea Islands, and is remarkable for a horny sheath which covers the upper part of its bill, which is also move-

able, and may be raised upwards or laid flat on the bill. We know of but one species, which is as large as a pigeon, and as white as snow. They feed on shell-fish and carrion. The length of this bird is from fifteen to eighteen inches.

Waterfowl with pinnated (or finned) feet.

Of this description of birds we know only three kinds.

Their general characteristic is that of having their toes furnished with jagged or scalloped membranes, which may probably assist them in swimming. They appear indeed in every respect an intermediate race between the tall and slender birds of the crane form, and the common web-footed waterfowl.

THE PHALAROPE

Is in every respect but the above characteristic, formed like the sandpiper. It is the size of the purre, and weighs one ounce. The GRAY PHALAROPE has the upper parts of the plumage ash coloured, varied a little with dusky white, and the breast and belly white. This bird breeds in the Arctic regions. In the summer months they are abundant in the North Georgian Islands. The RED PHALAROPE only differs from it in having the upper parts of the plumage of a deep red colour, striped with dusky yellow; and the under parts of a dusky red. These are sometimes found in England, and they breed in several small lakes in Orkney, where they are called the water snipe. There are about three foreign species.

THE COOT



Is a well known bird. It weighs from twenty-four to twenty-eight ounces. The bald part of the head, which in the water-hen is red, in the Coot is white. The upper parts of its plumage are black, the breast and belly white. As the Coot is a larger bird than the water-hen, which it much resembles, it is always seen in larger streams, and more remote from mankind. It there makes a nest of such weeds as the stream supplies, and lays them among the reeds, floating on the surface, and rising and falling with the water. The reeds among which it is built keep it fast; so that it is seldom washed into the middle of the stream. But if this happens, which is sometimes the case, the bird sits in her nest, like a mariner in his boat, and steers, with her legs, her cargo into the nearest harbour; there, having attained her port, she continues to sit in great tranquillity, regardless of the impetuosity of the current; and, though the water penetrates her nest, she hatches her eggs in that wet condition. The Coot is by no means a rare bird in Britain, where it resides permanently, though with the seasons it changes its residence. It is a rather timid bird, very inert, and

feeds in the evening, upon fishes, insects, seeds, and herbage. In Madagascar there is a Coot with a red comb like a cock.

To these birds with long legs and finny toes, we will add one genus more, with short legs and finny toes: viz. the GREBE. It is much larger than either of the former, and its plumage white and black. It differs also entirely in the shortness of its legs, which are made for swimming, and not walking: in fact, they are, from the knee upward, hid in the belly of the bird, and have consequently very little motion. By this mark, and by the scolloped fringe of the toes, this bird may be easily distinguished from all others.

As they are thus, from the shortness of their wings, ill formed for flying, and, from the uncommon shortness of their legs, utterly unfitted for walking, they seldom leave the water, and chiefly frequent those broad, shallow pools, where their faculty of swimming can be turned to the greatest advantage, in fishing and seeking their prey.

They are chiefly, in England, seen to frequent the meres of Shropshire and Cheshire; where they breed among reeds and flags, in a floating nest. It is never seen on land; and, though disturbed ever so often, will not leave that lake where alone, by diving and swimming, it can find food and security. It is chiefly sought for the skin of its breast, the plumage of which is of a most beautiful silvery white, and as glossy as satin.

Of the Grebe kind there are about thirteen species. The most common is the CRESTED GREBE. This bird is about the size of a duck. Its bill, that part especially towards the head, is of a reddish colour,

and is somewhat more than two inches in length. On the top of the head and neck is a beautiful crest of feathers, those on the neck appearing like a collar



or ruff, and seeming a good deal bigger than they really are ; those on the top of the head are black, those on the sides of the neck are of a reddish or cinereous colour ; the back and wings are of a darkish brown, pretty much inclining to black, except some of the exterior edges of the wing feathers, which are white. The breast and belly are of a light ash colour ; it has no tail ; the legs and toes are broad and flat. It has an unpleasant cry, and will occasionally, when angered or pleased, raise or fall the feathers of its crest.

The EARED GREBE is the size of a teal, and is distinguished by a tuft of orange coloured feathers, which spring from behind each eye ; it is a native of Siberia.

There is a still more beautiful species, viz. the RED-NECKED GREBE ; the chin of which is pale ash colour, the rest of the neck of a reddish chestnut.

CHAP. VI.

Of Web-footed Waterfowl...The AVOSET...The Scooping, American, and White Avozet...The COURIER...The FLAMINGO...The AUK...The Great Auk...The Razorbill...The Puffin...The Little Auk...The Tufted and Crested Auk, &c. ... The GUILLEMOT ... The Foolish, Lesser, and Marbled Guillemot ... The DIVER ... The Northern, Speckled, Black, and Red-throated Diver...The Chinese Diver...The TERN...The Great, Lesser, Black, and Striated Tern ...The Noddy...The PETREL...The Fulmar...The Shearwater...The Stormy Petrel...The Giant Petrel...The GULL...The Black-backed, Skua, Wagel, Herring Gulls, &c....The Kittiwake...The Common Gull...The Blackcap, &c....Modes of taking Seafowl...The MERGANSER...The Gooseander...The Dun Diver...The Smew ...The Hooded Merganser...The DUCK...The Swan...The Black Swan...The Goose...The Bean Goose...The Barnacle...The Brent Goose...The Mallard...The Eider Duck...The Velvet, Scoter, Tufted, and Scaup Duck...The Golden Eye...The Shoveller...The Pintail...The Pochard...The Long-tailed Duck...The Widgeon...The Teal ... The Muscovy, Brazilian, American, and Chinese Ducks...Decoy for Ducks...The PELICAN...The Frigate Pelican, or Man-of-War Bird...The Corvorant...The Shag...The Gannet, or Solan Goose...The Booby...The ALBATROSS...The Yellow-nosed Albatross...The SKIMMER...The PENGUIN...The Patagonian Penguin...The Magellanic Penguin...The TROPIC BIRD...The DARTER ...The White and Black-bellied Darters.

Web-footed Waterfowl.

OF the web-footed waterfowl, the few which are distinguished by the name of *long-legged* have so near an affinity with the birds of the preceding order, that some naturalists have classed them among the cranes, or waders ; and, indeed, were it not for the very accurate distinction which the form of the foot affords, analogy would direct us to this arrangement in preference to every other.

THE AVOSET

Is easily distinguished from all other birds by the form of its bill, which is very thin, slender, and bends considerably upwards. The SCOOPING AVOSET is about the size of the lapwing, or eighteen inches long; the bill is three inches and a half in length. The top of the head is black, the rest of the head, neck, and all the other parts of the body white, except the inner scapulars, the middle of the wing coverts and outer webs, and ends of the quills, which again are black. The legs are long, and of a bluish gray, and the toes have a connecting membrane. It weighs about thirteen ounces, and is frequent, in the winter, on most of the seacoasts of Europe, as well as in the fens of Lincolnshire, Cambridge, &c. It feeds on worms and insects, which it scoops out of the sand with its bill. The AMERICAN AVOSET differs only in being something larger, and having the neck and breast of a deep cream colour. In Hudson's Bay there is a WHITE AVOSET.

THE COURIER

Is an Italian bird, somewhat less than the avoSET, the bill is shorter, straight, and yellow. The upper parts of the plumage of a rusty brown, the under parts white. It is remarkable for its swiftness in running, from which property it derives its name.

THE FLAMINGO

Is, perhaps, the most remarkable of waterfowl; it is one of the tallest, and the most beautiful. The body, which is of a beautiful scarlet, is no bigger than that

of a swan ; but its legs and neck are of such an extraordinary length, that when it stands erect, it is six feet six inches high. Its wings, extended, are five feet six inches from tip to tip ; and it is four feet eight inches from tip to tail. The head is round and small, with a large bill, seven inches long, partly red, partly black, and crooked like a bow. The legs and thighs, which are not much thicker than a man's finger, are about two feet eight inches high ; and its neck near three feet long. The feet are feeble, and united by membranes, as in those of the goose. Of what use these membranes are does not appear, as the bird is never seen swimming, its legs and thighs being sufficient to bear it into those depths where it seeks for prey.

This extraordinary bird is now chiefly found in America, but was once known on all the coasts of Europe. It is still occasionally met with on the shores of the Mediterranean. Its beauty, its size, and the peculiar delicacy of its flesh, have been such temptations to destroy or take it, that it has long since deserted the shores frequented by man, and taken refuge in countries that are as yet but thinly peopled.

When the Europeans first came to America, and coasted down along the African shores, they found the Flamingos on several shores on either continent gentle, and no way distrustful of mankind. When the fowler had killed one, the rest of the flock, far from attempting to fly, only regarded the fall of their companion in a kind of fixed astonishment : another and another shot was discharged ; and thus the fowler often levelled the whole flock, before one of them began to think of escaping.

But at present it is very different in that part of the world ; and the Flamingo is not only one of the

scarcest but of the shyest birds in the world, and the most difficult of approach. They chiefly keep near the most deserted and inhospitable shores; near salt water lakes and swampy islands. When seen by mariners in the day, they always appear drawn up in a long close line of two or three hundred together; and, as Dampier tells us, present, at the distance of half a mile, the exact representation of a long brick wall. Their rank, however, is broken when they seek for food; but they always appoint one of the number as a watch, whose only employment is to observe and give notice of danger while the rest are feeding. As soon as this trusty sentinel perceives the remotest appearance of danger, he gives a loud scream, with a voice as shrill as a trumpet, and instantly the whole cohort are upon the wing. The flesh of the old ones is black and hard, though, Dampier says, well tasted: that of the young ones is better. But, of all delicacies, the Flamingo's tongue is the most celebrated. In fact, the Roman emperors considered them as the highest luxury; and we have an account of one of them, who procured fifteen hundred Flamingoes' tongues to be served up in a single dish. The tongue of this bird, which is so much sought after, is a good deal larger than that of any other bird whatever. The bill of the Flamingo is like a large black box, of an irregular figure, and filled with a tongue which is black and gristly.

Their time of breeding is according to the climate in which they reside: in North America they breed in our summer; on the other side of the line they take the most favourable season of the year. They build their nests in extensive marshes, and where they are in no danger of a surprise. The nest is

not less curious than the animal that builds it: it is raised from the surface of the pool about a foot and a half, formed of mud, scraped up together, and hardened by the sun, or the heat of the bird's body: it resembles a truncated cone, or one of the pots which we see placed on chimneys; on the top it is hollowed out to the shape of the bird, and in that cavity the female lays her eggs, without any lining but the well cemented mud that forms the sides of the building. She always lays two eggs, and no more; and, as her legs are immoderately long, she straddles on the nest, while her legs hang down, one on each side, into the water. The young ones are a long while before they are able to fly; but they run with amazing swiftness. They are sometimes caught; and, very different from the old ones, suffer themselves to be carried home, and are tamed very easily.

THE AUK.

THE first European bird of the web-footed fowls with short legs, which naturalists introduce to our notice is the Auk, of which there are about twelve species, foreign and domestic. The whole tribe is distinguished peculiarly by the form of the bill, which is strong, convex, compressed at the sides, in general crossed with several furrows, and in some degree resembling the coulter of a plough.

THE GREAT AUK

Is the size of a goose; its bill is black, about four inches and a quarter in length, and covered at the base with short velvet-like feathers. The upper

parts of the plumage are black, and the lower parts white, with a spot of white between the bill and the eyes, and an oblong stripe of the same on the wings, which are too short for flight. The bird is also a



very bad walker, but swims and dives well. It is, however, observed by seamen, that it is never seen out of soundings, so that its appearance serves as an infallible direction to land. It feeds on the lump fish and others of the same size; and is frequent on the coasts of Norway, Greenland, Newfoundland, &c. It lays its eggs close to the seamount.

THE RAZORBILL

Is not above half the size of the preceding, which it resembles both in form and plumage, except that it has the use of its wings, and lays its egg (for each of these species lays but one) on the bare top of a precipice, and fastens it by a cement, so as to prevent its rolling off. It is pretty common on the coasts of England during the summer season. The BLACK-BILLED AUK is still smaller.

THE PUFFIN



Is the size of the teal, weighs about twelve ounces, and is twelve inches in length. The bill is much compressed; the half next the point is red, that next the base is blue gray. It has three furrows or grooves impressed in it; one in the livid part, two in the red. The eyes are fenced with a protuberant skin, of a livid colour; and they are gray or ash coloured.

The Puffin, like all the rest of this kind, has its legs thrown so far back, that it can hardly move without tumbling. This makes it rise with difficulty, and subject to many falls before it gets upon the wing; but as it is a small bird, when it once rises, it can continue its flight with great celerity.

All the winter these birds are absent, visiting regions too remote for discovery. At the latter end of March, or the beginning of April, come over a troop of their spies, or harbingers, that stay two or three days, as it were to view and search out for their former situations, and see whether all be well.

This done, they once more depart; and, about the beginning of May, return again with the whole army of their companions. But if the season happens to be stormy and tempestuous, and the sea troubled, the unfortunate voyagers undergo incredible hardships; and they are found, by hundreds, cast away upon the shores, lean and perished with famine.

The Puffin, when it prepares for breeding, which always happens a few days after its arrival, begins to scrape out a hole in the ground, not far from the shore; and when it has penetrated some way into the earth, it then throws itself upon its back, and with its bill and claws thus burrows inward, till it has dug a hole with several windings and turnings, from eight to ten feet deep. It particularly seeks to dig under a stone, where it expects the greatest security. In this fortified retreat it lays one egg; which, though the bird be not much bigger than a pigeon, is the size of a hen's.

Few birds or beasts will venture to attack them in their retreats. When the great sea raven comes to take away their young, the Puffin boldly opposes him. Their meeting affords a most singular combat. As soon as the raven approaches, the Puffin catches him under the throat with its beak, and sticks its claws into its breast, which makes the raven, with a loud screaming, attempt to get away; but the little bird still holds fast to the invader, nor lets him go till they both come to the sea, where they drop down together, and the raven is drowned: yet the raven is but too often successful; and invading the Puffin at the bottom of its hole, devours both the parent and its family.

The LITTLE AUK is still less than the puffin, being not above the size of a blackbird.

Of the foreign birds of this genus, the **TUFTED AUK** is one of the most curious. It is somewhat bigger than the puffin, and is distinguished by a tuft of feathers, four inches in length, which arises over each eye, and falls elegantly on each side of the neck. It is found at Kamtschatka.

The **CRESTED AUK** is perhaps still more remarkable, having its head adorned with a crest, composed of long feathers, and which curves forward over the bill. This bird inhabits the islands contiguous to Japan. Besides these, there are the **PARROQUET** and **DUSKY AUK**, and some other species of less note.

THE GUILLEMOT



Is nearly allied to the preceding genus, but it wants the characteristic bill, which in this genus is slender, strong, and pointed.

The largest species with which we are acquainted is the **FOOLISH GUILLEMOT**, which weighs about twenty-four ounces, and is seventeen inches in length. The bill is black, and three inches in length. The head, neck, back, wings, and tail are of a deep mouse colour; the tips of the lesser quill feathers, and all

the under parts of the plumage are white. They accompany the auk in its visits to our shores, and are such foolish birds that they will not quit the rock, though they see their companions killed around them.

The LESSER GUILLEMOT weighs about fifteen ounces. The upper parts of its plumage are darker than in the former species. The BLACK GUILLEMOT is entirely black, except a large mark of white on the wings. In winter, however, this bird is said to change to white; and there is a variety in Scotland not uncommon, which is spotted, and which Mr. Edwards has described under the name of the Spotted Greenland Dove. The MARBLED GUILLEMOT, which is found at Kamtschatka, &c. receives its name from its plumage, which is dusky, elegantly marbled with white.

THE DIVER GENUS

INCLUDES about seven species foreign and domestic. The great NORTHERN DIVER, or LOON, weighs sixteen pounds, and measures three feet six inches in length. The bill is strong, black, and above four inches in length. The head and neck are velvet black, with a white crescent immediately under the throat, and another behind. The upper parts of the plumage are also black, spotted with white, and the breast and belly perfectly white. This bird is found in all the northern parts of Europe, and feeds on fish. In this country it breeds on the inaccessible rocks and steep cliffs in the Isle of Man, and likewise in Cornwall; on Prestholm Island, near Beaumaris in the Isle of Anglesey; also on the Fern Island, near Northumberland, and in the cliffs about Scarborough, in Yorkshire; and several other places in England.

The Northern Diver lays exceedingly large eggs, being full three inches long, blunt at one end, and sharp at the other, of a sort of bluish colour, generally spotted with some black spots or strokes. It flies high and well.

The IMBER is less than the preceding, but still larger than a goose. The upper parts of the plumage are in general dusky; the under parts silvery white. It is very common in the Orkneys. The skins of both these species are so remarkably tough, that in some of the northern countries they have been used as leather.

The SPECKLED DIVER is more common in the southern parts of Europe. It is called on the Thames the *Sprat Loon*. It weighs about two pounds and a half; and has the upper parts of the body dusky spotted with white, the breast and belly white. It is so confident of its skill in diving, that it often approaches very near the boats when fishing for sprats or herrings.

The BLACK-THROATED DIVER has the fore part of the throat black, the back and wings of the same colour spotted with white; the head and neck ash colour, and the breast and belly white. This bird is common in the northern regions, but seldom found in France or England.

The RED-THROATED DIVER differs chiefly from the preceding in having the throat and part of the neck of a fine red; the upper parts of the body also are dusky, marked with a few white spots. It is seldom found to the south of Scotland.

Of the foreign birds of this species, the CHINESE DIVER is the only animal worth notice. The upper parts of the plumage are of a greenish brown; the under parts a reddish white, marked with dark spots.

This is generally supposed to be one of the birds which the Chinese train up for the purpose of fishing, of which we shall have occasion to treat further when we speak of the corvorant.

THE TERN.

Of the Tern there are about twenty-three different species, which are all distinguished by one common characteristic, viz. the forked tail.

THE GREAT TERN



Is about fourteen inches long, and weighs four ounces and a quarter. The bill and feet are a fine crimson : the former is tipped with black, and very slender. The back of the head is black ; the upper part of the body a pale gray, and the under part white. These birds have been called sea swallows, as they appear to have all the same actions at sea that the swallow has at land, seizing every insect which appears on the surface, and darting down upon the smaller fishes, which they seize with incredible rapidity.

The LESSER TERN weighs only two ounces five grains. The bill is yellow ; and from the eyes to the bill is a black line. In other respects it almost exactly resembles the preceding.

The **BLACK TERN** is of a middle size between the two preceding species. It weighs two ounces and a half. It receives its name from being all black as far as the vent, except a spot of white under the throat. This bird is called about Cambridge the *Car Swallow*. It is a very noisy animal.

Among the foreign birds of the Tern genus, there are some found of a snowy white; but the most singular bird of this kind is the **STRIATED TERN** which is found at New Zealand. It is thirteen inches in length. The bill is black, and the body in general mottled, or rather striped, with black and white. The **NODDY** is about fifteen inches long. The bill is black, and two inches long, and the whole plumage a sooty brown, except the top of the head, which is white. It is a very common bird in the tropical seas, where it is known frequently to fly on board ships, and is taken with the hand. But though it be thus stupid, it bites the fingers severely, so as to make it unsafe to hold it. It is said to breed in the Bahama Islands.

THE PETRELS.

THE whole genus of Petrels are known by having, instead of a back toe, only a sharp spur or nail; they have also a faculty of spouting from their bills, to a considerable distance, a large quantity of pure oil, which they do, by way of defence, into the face of any person who attempts to take them.

THE FULMAR

Is the largest of the kind which is known in these climates. It is superior to the size of the common gull, being about fifteen inches in length, and in weight seventeen ounces. The bill is very strong,

yellow, and hooked at the end. The head, neck, and all the under parts of the body, are white; the back



and wings ash-coloured, the quills dusky, and the tail white. It feeds on the blubber of whales, which supplies the reservoir, whence it spouts, with a constant stock of ammunition. This oil is esteemed by the inhabitants of the North as a sovereign remedy in many complaints both external and internal. The flesh is also considered by them as a delicacy, and the bird is therefore in great request at St. Kilda. When a whale is taken, these birds will, in defiance of all endeavours, light upon it, and pick out large lumps of fat, even while it is alive.

The SHEARWATER, or MANKS PUFFIN, as it is called by Willoughby, is something smaller than the preceding. The head and all the upper part of the body are of a sooty blackness; and the under part and inner coverts of the wings white. These birds are found in the Calf of Man and the Scilly Isles. In February they take a short possession of the rabbit burrows, and then disappear till April; they lay one egg, and in a short time the young are fit to be taken. They are then salted and barrelled. During the day they keep at sea fishing, and towards

evening return to their young, whom they feed by discharging the contents of the stomach into their mouths.

THE STORMY PETREL



Is about the size of a house swallow. The general colour of the plumage is black, except about the rump, which is white. Stormy Petrels have been seen in flocks which have been estimated to contain at least a hundred and fifty millions of them. They are always to be found on the shores of Britain, and seem to be diffused all over the world. They sometimes hover over the water like swallows, and sometimes appear to run on the top of it: they are also excellent divers. It skims along the hollows of the waves, and through the spray upon their tops, at the astonishing rate of sixty miles in an hour. They are very clamorous, and are called by the sailors *Mother Cary's chickens*, who observe that they never settle or sit upon the water but when stormy weather is to be expected. They are found in most parts of the world; and in the Feroe islands the inhabitants draw a wick through the body of the bird, from the mouth to the rump, which serves them as a candle, being fed by the vast proportion of oil which this little animal contains. This oil it is supposed to

collect from the ocean by means of the feathers on its breast.

There are about twenty species of foreign birds of this kind. In the high southern latitudes one is found which is the size of a goose, and on that account called the **GIANT PETREL**. The upper parts of its plumage are pale brown, mottled with dusky white; the under parts are white. There is another species in Norfolk Island, which burrows in the sand like a rabbit.

THE GULL,



AND all its varieties, is well known to most readers. It is seen with slow-sailing flight hovering over rivers, to prey upon the smaller kinds of fish; it is seen following the ploughman in fallow fields to pick up insects; and when living animal food is not to be found, it has even been known to eat carrion, and whatever else offers of the kind.

Of the Gull there are about nineteen species. The largest with which we are acquainted is the **BLACK AND WHITE** or **BLACK-BACKED GULL**. It generally weighs upwards of four pounds, and is twenty-five

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There are about twenty species of foreign birds of this kind. In the high southern latitudes one is found which is the size of a goose, and on that account called the GIANT PETREL. The upper parts of its plumage are pale brown, mottled with dusky white; the under parts are white. There is another species in Norfolk Island, which burrows in the sand like a rabbit.

THE GULL,



AND all its varieties, is well known to most readers. It is seen with slow-sailing flight hovering over rivers, to prey upon the smaller kinds of fish; it is seen following the ploughman in fallow fields to pick up insects; and when living animal food is not to be found, it has even been known to eat carrion, and whatever else offers of the kind.

Of the Gull there are about nineteen species. The largest with which we are acquainted is the BLACK AND WHITE or BLACK-BACKED GULL. It generally weighs upwards of four pounds, and is twenty-five

or twenty-six inches from the point of the bill to the end of the tail ; and from the tip of each wing, when extended, five feet and several inches. The bill appears compressed sideways, being more than three inches long, and hooked towards the end, like the rest of this kind, of a sort of orange colour ; the nostrils are of an oblong form ; the mouth is wide, with a long tongue and very open gullet. The irides of the eyes are of a very delightful red. The wings and the middle of the back are black ; only the tips of the covert and quill feathers are white. The head, breast, tail, and other parts of the body, are likewise white. The tail is near six inches long, the legs and feet are flesh-coloured, and the claws black. There are about twenty varieties of this tribe, which are all distinguished by an angular knob on the chap.

Gulls are found in great plenty in every place ; but it is chiefly round our rockiest shores that they are seen in the greatest abundance : it is there that the Gull breeds and brings up its young ; it is there that millions of them are heard screaming with discordant notes for months together.

The SKUA GULL is the size of a raven. The upper parts of the head, neck, back, and wings, are deep brown ; the under parts a pale rusty ash colour. The legs are black, rough, and warty, and the talons very strong and hooked. It is mostly a native of the North, though often found in England. It is a most formidable bird, as it not only preys upon fish, but upon all the smaller waterfowl, and even on young lambs. It has the fierceness of the eagle in defending its young ; and when the inhabitants of the Faro isles attack its nest, they hold a knife over their heads, on which the Skua will transfix itself in its fall on the invaders. On the rocky island of Foula, one of the Shetland isles, it is a privileged bird, as

it is said to defend the flocks from the eagle, which it pursues and beats off with great fury whenever he presumes to visit the island.

The WAGEL GULL has its whole plumage composed of a mixed brown ash colour and white. It weighs about three pounds.

The HERRING GULL resembles the black-backed in every thing but size, and that the plumage on the back and wings is more inclined to ash colour than black; it weighs thirty ounces. The GLAUCOUS GULL, or BURGOMASTER, which inhabits Norway, &c. is rather larger than the Herring Gull, but resembles it in most other respects. The SILVERY GULL is the same size as the Herring Gull, and not much different in plumage and manners.

The TARRACK and the KITTIWAKE GULLS also so nearly resemble each other, that some authors affirm the latter to be only the Tarrack in a state of perfection. The head, neck, belly, and tail of the Kittiwake are of a snowy whiteness; the back and wings are gray; and both species have behind each ear a dark spot: both species are about the same size, viz. fourteen inches; and the Tarrack weighs seven ounces. Of the ARCTIC GULL the male has the top of the head black; the back, wings, and tail dusky; the rest of the body white: the female is entirely brown. It has been called the parasite, from its habits of pursuing the lesser Gulls till they drop their ordure through fear, which this filthy animal catches and devours before it drops into the water.

The COMMON GULL is seventeen inches long, and weighs one pound. The bill is yellow; the back and wings a pale gray; and the head and rest of the body white. The WINTER GULL is also very common in all these parts of Europe. The top of

the head is white, marked with oblong dusky spots; the back and wings ash colour, marked with dusky brown.

The jelly-like substance known by the name of star-shot, or star-jelly, owes its origin to some of these birds, being nothing but the half-digested remains of earthworms, on which they feed, and often discharge from their stomachs.

The PEWIT GULL, or BLACK-CAP, is so called from the head and throat being of a dark or black colour. The RED-LEGGED GULL, the BROWN-HEADED GULL, the LAUGHING GULL, which only differs from the others in having the legs black instead of red, are possibly only varieties of the same species. They are in length from fifteen to eighteen inches. The back and wings of these birds are in general ash colour, and the rest of the body white. The young birds of these species are thought by some to be good eating.

The GUAT GULL, which is found on the borders of the Caspian Sea, though distinguished by a black head, is quite a different species from our black-cap, as it equals in size the Barnacle goose, and weighs between two and three pounds: its voice too is as hoarse as that of a raven.

The Gull genus, like all other rapacious birds, lay but few eggs; and hence, in many places, their number is daily seen to diminish. Most of the kind are fishy tasted, with black stringy flesh; and of these, the poor inhabitants of our northern islands make their wretched banquets. They have been long used to no other food; and even salted Gull can be relished by those who know no better.

The Gull, the petrel, the tern, have all nearly the same habits, the same nature, and are caught in the

same manner; that is, at the most imminent risk, and with the loss of many lives in the course of a season.

But of this dangerous sport a more particular description will perhaps be acceptable to the reader. Those who have been upon our coasts know that there are two different kinds of shores; that which slopes towards the water with a gentle declivity, and that which rises with a precipitate boldness, and appears as a bulwark to repel the force of the invading deep. It is to such shores as these that the vast variety of sea-fowl resort, and in the cavities of these rocks they breed in safety. Of the tremendous sublimity of these elevations it is not easy to form an idea. The boasted works of art, the highest towers, the noblest domes, are but ant-hills, when put in comparison; the single cavity of a rock often exhibits a coping higher than the ceiling of a Gothic cathedral. What should we think of a precipice three quarters of a mile in height? and yet the rocks of St. Kilda are still higher! What must be our awe to approach the edge of that impending height, and to look down on the unfathomable vacuity below! To ponder on the terrors of falling to the bottom, where the waves, that swell like mountains, are scarcely seen to curl on the surface, and the roar of the ocean appears softer than the murmur of a brook! It is in these formidable mansions that myriads of sea-fowls are ever seen sporting. To the spectator from above, those birds, though some of them above the size of an eagle, seem scarcely as large as a swallow: and their loudest screaming is scarce perceptible.

Yet even here these animals are not in perfect security from the arts and activity of man. Want,

which is the great spring of human exertion, can force the cottager to tempt the most formidable dangers, and to put forth an endeavour almost beyond the force of man. When the precipice is to be assailed from below, the fowlers furnish themselves with poles of five or six ells in length, with a hook at the end, and fixing one of these poles in the girdle of the person who is to ascend, his companions, in a boat, or on a projection of the cliff, assist his progress till he procures a firm footing. When this is accomplished, he draws the others up with a rope, and another man is forwarded again by means of the pole to a higher station. Frequently the person who is in the highest situation holds another man suspended by a rope, and directs his course to the place where the birds have placed their nests. It unfortunately too often happens that the man who holds the rope has not a footing sufficiently secure, and in that case both of them inevitably perish.

Some precipices are so abrupt, that they are not by any means to be ascended from below. In this case a rope is provided of eighty or a hundred fathoms long, which one of the fowlers fastens to his waist, and between his legs, in such a manner as to support him in a sitting posture. The rope is held by five or six persons on the top, and it slides upon a piece of wood, which is laid so as to project beyond the precipice. By means of this apparatus, the man is gradually let down, and he attacks the habitations of the feathered race with the most sanguinary success. This operation is, however, not without its dangers. By the descent and friction of the rope the loose stones are furiously hurled down on every side. To defend himself from their blows, the fowler covers his head with a kind of helmet, or with a sea-

man's shaggy cap. Many, however, lose their lives by this kind of accident. Those who are unskilful frequently suffer by a giddiness with which they are seized on beholding themselves suspended from this tremendous height: he, on the other hand, who is accustomed to the sport, swings himself about with amazing dexterity; he directs his attack to that part of the rock which promises the amplest success; with his fowling staff he strikes the game as it proceeds out of the holes; he occasionally disengages himself from the rope by which he was suspended; he roams through the cavities of the rock, and when he has provided himself with a sufficient booty, he gives the signal to his companions, and is again drawn up, when the festivity of the evening, among these poor and desperate adventurers, generally compensates for the fatigues and dangers of the day.

THE MERGANSER GENUS

INCLUDES only about six species, in all of which the bill is slender, and furnished at the end with a crooked nail, and grated or toothed both upper and under chap like a saw. The largest of the kind is the GOOSEANDER, which weighs about four pounds. The bill is red; the head very full of feathers on the top and back part. The plumage is various and beautiful. The head and upper parts are fine glossy black, the rump and tail ash colour, and the under parts of the neck and body a fine pale yellow. Its manners and appetites entirely resemble those of the diver. It feeds upon fish, for which it dives; it is said to build its nest upon trees, like the heron and the corvorant.

The DUN DIVER is less than the gooseander. The

upper part of the head is reddish brown ; the back and wings ash colour ; and the lower parts of the body white. It is found in the same places and has the same manners with the gooseander. The RED-BREASTED MERGANSER is still smaller, weighing only two pounds. The head and neck are black, glossed with green ; the rest of the neck and the belly white : the upper part of the back is glossy black ; the lower parts and the rump are striated with brown and pale gray ; on the wings there are white bars tipped with black, and the breast is reddish, mixed with black and white. The plumage of the female is less splendid ; and they differ in another respect, viz. that the male has a very full and large crest, the female only the rudiment of one.

THE SMEW, OR WHITE-HEADED GOOSEANDER,



MEASURES eighteen inches from the point of the bill to the extremity. It has a fine crest upon the head, which falls down towards the back part of it, under which, on each side of the head, is a black spot : the rest of the head and neck, and the under parts of the body, are white ; the back and the wings are a pleasing mixture of black and white. The tail is about three inches long, of a kind of dusky ash colour, the feathers

on each side shortening gradually. The female has no crest; the sides of the head red; the wings of a dusky ash colour; the throat is white. In other respects it agrees with the male.

The MINUTE MERGANSER is still less than the smew. The head is slightly crested, and of a rust colour; the back and tail are of a dusky ash colour; the breast mottled, and the belly white.

The HOODED MERGANSER is a native of North America. It is about the size of a widgeon. The head and neck are dark brown, the former surrounded with a large round crest, the middle of which is white. The back and quills are black, the tail dusky; and the breast and belly white, undulated with black. The female is fainter in the colour of her plumage, and has a smaller crest.

THE DUCK GENUS

EMBRACES one hundred species, infinitely differing in size and plumage; many of them are rendered domestic, but a still greater proportion are in their native untamed state. All the species are distinguished by their strong flat bill, furnished at the end with an additional piece, termed a nail, and marked at the edges with lamellæ, or teeth.

Though these birds do not reject animal food when offered them, yet they can contentedly subsist upon vegetables, and seldom seek any other. They are easily provided for; wherever there is water there seems to be plenty. All the other web-footed tribes are continually voracious, continually preying. These lead more harmless lives: the weeds on the surface of the water, or the insects at the bottom, the grass by the bank, or the fruits and corn in cultivated

grounds, are sufficient to satisfy their easy appetites.

They breed in great abundance, and lead their young to the pool the instant they are excluded.

As their food is simple, so their flesh is nourishing and wholesome. The swan was considered as a high delicacy among the ancients; the goose was abstained from as totally indigestible. Modern manners have inverted tastes; the goose is now become the favourite; and the swan is seldom brought to table, unless for the purpose of ostentation. But at all times the flesh of the duck was in high esteem; the ancients thought even more highly of it than we do. We are contented to eat it as a delicacy; they also considered it as a medicine: and Plutarch assures us, that Cato kept his whole family in health, by feeding them with duck whenever they threatened to be out of order.

THE SWAN.



So much difference is there between this bird when on land and in the water, that it is hardly to be supposed the same, for in the latter, no bird can possibly exceed it for beauty and majestic appearance.

When it ascends from its favourite element, its motions are awkward, and its neck is stretched forward with an air of stupidity; it has, indeed, the air of being only a larger sort of goose; but when seen smoothly gliding along the water, displaying a thousand graceful attitudes, and moving at pleasure without the smallest apparent effort, there is not a more beautiful figure in all nature. In its form, we find no broken or harsh lines; in its motions, nothing constrained or abrupt; but the roundest contours, and the easiest transitions; the eye wanders over the whole with unalloyed pleasure, and with every change of position every part assumes a new grace. It will swim faster than a man can walk.

This bird has long been rendered domestic; and it is now a doubt whether there be any of the tame kind in a state of nature. The colour of the tame Swan is entirely white, and it generally weighs full twenty pounds. Under the feathers is a very thick soft down, which is made an article of commerce, for purposes of both use and ornament. The windpipe sinks down into the lungs in the ordinary manner; and it is the most silent of all the feathered tribes; it can do nothing more than hiss, which it does on receiving any provocation. In these respects it is very different from the wild or whistling Swan.

The beautiful bird is as delicate in its appetites, as it is elegant in its form. Its chief food is corn, bread, herbs, growing in the water, and roots and seeds, which are found near the margin. At the time of incubation it prepares a nest in some retired part of the bank, and chiefly where there is an islet in the stream. This is composed of water plants, long grass, and sticks: and the male and female assist in forming it with great assiduity. The Swan lays

seven or eight eggs, white, one every other day, much larger than those of a goose, with a hard, and sometimes a tuberos shell. It sits six weeks before its young are excluded; which are ash coloured when they first leave the shell, and for some months after. It is not a little dangerous to approach the old ones, when their little family are feeding round them. Their fears, as well as their pride, seem to take the alarm, and when in danger, the old birds carry off the young ones on their back. A female has been known to attack and drown a fox, which was swimming towards her nest; they are able to throw down and trample on youths of fifteen or sixteen; and an old Swan can break the leg of a man with a single stroke of its wing.

Swans were formerly held in such great esteem in England, that, by an act of Edward the Fourth, none, except the son of the king, was permitted to keep a Swan, unless possessed of a freehold to the value of five marks a year. By a subsequent act, the punishment for taking their eggs was imprisonment for a year and a day, and a fine at the king's will. At present they are not valued for the delicacy of their flesh; but numbers are still preserved for their beauty. Many may be seen on the Thames, where they are esteemed royal property, and it is accounted felony to steal their eggs. On this river, as far as the conservancy of it belongs to the city, they are under the care of the corporation; and at certain times the lord mayor, aldermen, &c. proceed up the Thames, to what is commonly called the Swan hopping, to mark the young birds. The Swan is a long-lived bird, and sometimes attains the age of more than a hundred years.

The WILD or WHISTLING SWAN, though so strongly

resembling this in colour and form, is yet a different bird; for it is very differently formed within. The wild swan is less than the tame almost a fourth; for as the one weighs twenty pounds, the other only weighs sixteen pounds and three quarters. The colour of the tame Swan is all over white; that of the wild bird is along the back and the tips of the wings, of ash colour; the tame swan is mute, the wild one has a sharp loud cry, particularly while flying. But these are slight differences, compared to what are found upon dissection. The wild species is found in most of the northern regions, in America, and probably in the East Indies.

The **BLACK SWAN**. New Holland, that country of animal wonders, presents us with a bird which the ancients imagined could not possibly have existence. The Black Swan is exactly similar in its form to the Swan of the old world, but is somewhat smaller in size. Every part of its plumage is perfectly black, with the exception of the primary and a few of the secondary quill feathers, which are white. The bill is of a bright red above, is crossed at the anterior part by a whitish band; is of a grayish white on the under part; and, in the male, is surmounted at the base by a slight protuberance. The legs and feet are of a dull ash colour. Black Swans, in their wild state, are extremely shy. They are found in Van Diemen's Land, New South Wales, and on the western coast of New Holland; and are generally seen swimming on a lake, in flocks consisting of eight or nine individuals. On being disturbed they fly off in a direct line one after the other, like wild geese.

THE GOOSE,



IN its domestic state, exhibits a variety of colours. The WILD GOOSE, or GRAY LAG, always retains the same marks: the whole upper part is ash coloured; the breast and belly are of a dirty white; the bill is narrow at the base, and at the tip it is black; the legs are of a saffron colour, and the claws black. It frequently weighs about ten pounds.

The Wild Goose is supposed to breed in the northern parts of Europe; and, in the beginning of winter, to descend into more temperate regions. If they come to the ground by day, they range themselves in a line, like cranes; and seem rather to have descended for rest, than for other refreshment. When they have sat in this manner for an hour or two, we have heard one of them, with a loud long note, sound a kind of charge, to which the rest punctually attended, and they pursued their journey with renewed alacrity. Their flight is very regularly arranged; they either go in a line abreast, or in two lines, joining in an angle in the middle.

The common TAME GOOSE is nothing more than the Wild Goose in a state of domestication. It is sometimes found white, though much more fre-

quently verging to gray; and it is a dispute among men of taste, which should have the preference.

These birds, in rural economy, are an object of attention and profit, and are no where kept in such vast quantities as in the fens of Lincolnshire; several persons there having as many as a thousand breeders. They are bred for the sake of their quills and feathers; for which they are stripped while alive, once in the year for their quills, and no less than five times for the feathers: the first plucking commences about Lady Day, for both; and the other four between Lady Day and Michaelmas. It is said that in general the birds do not suffer much from this operation; except cold weather sets in, which then kills great numbers of them. The old Geese submit quietly to be plucked, but the young ones are very noisy and unruly. The possessors, except in this cruel practice, treat their birds with kindness; lodging them very often even in the same room with themselves.

These Geese breed in general only once a year, but if well kept they sometimes hatch twice in a season. During their sitting, each bird has a space allotted to it, in rows of wicker pens placed one above another; and it is said that the gozzard, or gooseherd, who has the care of them, drives the whole flock to water twice a day, and bringing them back to their habitations, places every bird in its own nest. The numbers of Geese which are sent to the metropolis for sale are enormous, two or three thousand being frequently seen in a drove, and some droves having even contained more than nine thousand.

The BEAN GOOSE is a bird of passage, and arrives in Lincolnshire about autumn, and departs in May. It weighs about six pounds. The bill is smaller than in the preceding species. The head and neck

are brown, the back and wings ash colour, and the breast and belly dirty white. It feeds much on the young corn, beans, &c. whence its name.

The BARNACLE differs in some respects from all these; being less than any of them, with a black bill, much shorter than any of the preceding. It is scarcely necessary to combat the idle error of this bird's being bred from the shell sticking to ships' bottoms; it is well known to be hatched from an egg, in the ordinary manner, and to differ in very few particulars from all the rest of its kind. The upper parts of the plumage are black, the forehead, chin, and all the under parts white.

The BRENT GOOSE is still less than the former, and not bigger than a Muscovy duck, except that the body is longer. The head, neck, and upper part of the breast, are black; about the middle of the neck, on each side, are two small spots, or lines of white, which together appear like a ring. Both this and the preceding frequent our coasts in winter; and in some seasons have been so numerous, on the coasts of Picardy, as to become a pest to the inhabitants.

THE TAME DUCK



Is the most easily reared of all our domestic animals. The WILD DUCK, or MALLARD, differs, in many respects, from the tame; and in them there

is a still greater variety than among the domestic kinds.

The most obvious distinction between wild and tame Ducks is in the colour of their feet; those of the tame Duck being black; those of the wild Duck yellow. The difference between wild Ducks among each other, arises as well from their size, as the nature of the place they feed in. Sea Ducks, which feed in the salt water, and dive much, have a broad bill, bending upwards, a large hind toe, and a long blunt tail. Pond Ducks, which feed in splashes, have a straight and narrow bill, a small hind toe, and a sharp pointed train. The former are called, by our decoy-men, foreign Ducks; the latter are supposed to be natives of England. In this tribe, we may rank, as natives of Europe, the EIDER DUCK, which is double the size of a common Duck, with a black bill; the VELVET DUCK, not so large, and with a yellow bill; the SCOTER DUCK, or BLACK DIVER, with a knob at the base of a yellow bill; the TUFTED DUCK, adorned with a thick crest; the SCAUP DUCK, less than the common Duck, with the bill of a grayish blue colour; the GOLDEN EYE, with a large white spot at the corners of the mouth, resembling an eye; the SHELDRAKE, with the bill of a bright red, and swelling into a knob; the MALLARD, which is the stock whence our tame breed has probably been produced; the SHOVELLER, which has a bill three inches long, and remarkably broad at the end; the PINTAIL, with the two middle feathers of the tail three inches longer than the rest; the POCHARD, with the head and neck of a bright bay; the LONG-TAILED DUCK, the general colour of whose plumage is deep chocolate, and the outer feathers of the tail, which are white, four inches longer than the rest;

the WIDGEON, and lastly, the TEAL. Of these we shall describe more particularly the Eider Duck, the Widgeon, and the Teal.

THE EIDER DUCK



HAS a black cylindrical bill, and the feathers of the forehead and cheeks advance far into the base. In the male, the feathers of part of the head, the lower part of the breast, the belly, and the tail, are black, as are also the quill feathers of the wings; and nearly all the rest of the body is white. The legs are green. The female is of a reddish brown, variously marked with black and dusky streaks. It is principally found in the western isles of Scotland, on the coasts of Norway, Iceland, and Greenland, and in many parts of North America.

The female lays from three to five eggs (sometimes as many as eight), which are large, smooth, glossy, and of a pale olive colour. She generally lays among stones, or plants, near the sea, but in a soft bed of down, which she plucks from her own breast. Sometimes two females will lay their eggs in the same nest, in which case they always agree remarkably well. As long as the female is sitting, the male continues on watch near the shore; but as

soon as the young are hatched he leaves them. The mother, however, remains with them a considerable time afterwards. It is curious to observe her manner of leading them out of the nest, almost as soon as they creep from the eggs. Going before them to the shore, they trip after her: and, when she comes to the waterside, she takes them on her back, and swims a few yards with them, when she dives; and the young ones are left floating on the surface, obliged to take care of themselves. They are seldom seen afterwards on land.

In Iceland the Eider Ducks generally build their nests on small islands, not far from the shore; and sometimes even near the dwellings of the natives, who treat them with so much attention and kindness as to render them nearly tame. From these birds is produced the soft down so well known by the name of eider, or edder down, which is so light and expansive that a couple of handfuls will fill a down quilt, which, in cold countries, is used instead of a quilt or blanket. In the breeding season the birds pluck it from their breasts to line their nests, and make a soft bed for the young ones. When the natives come to the nest, they carefully remove the female and take away the superfluous down and eggs; after this, they replace the female: she then begins to lay afresh, and covers her eggs with new down, which she also plucks from her body; when this is scarce, or she has no more left, the male comes to her assistance, and covers the eggs with his down, which is white, and easily distinguished from that of the female. When the young ones leave the nest, which is about an hour after they are hatched, it is once more plundered.—The most eggs and the best down are got during the first three weeks of their

laying; and it has generally been observed, that they lay the greatest number of eggs in rainy weather. One female, during the time of laying, generally gives half a pound of down; which, however, is reduced one half after it is cleaned. When pure it is sold in Lapland for two rix dollars a pound. The Iceland Company at Copenhagen generally export from Iceland about one thousand five hundred or two thousand pounds weight of this down, besides what is privately purchased by foreigners.

The Greenlanders kill these birds with darts; pursuing them in their little boats, watching their course by the air bubbles when they dive, and always striking them when they rise to the surface wearied. The flesh is valued as food, and their skins are made into warm and comfortable undergarments.

THE WIDGEON.



THIS bird weighs about twenty-two ounces; it has a black nail at the end of the upper mandible of the bill, the other part of which is of a lead colour; the structure of the head and mouth very much resembles the common wild duck, only the head does not seem to be quite so large, in proportion to the body, which also appears of a finer shape, and the wings longer. The crown of the head towards

the base of the bill is of a pale pink colour, inclining to a reddish white; the other parts of the head and neck are red; the sides of the body and the upper part of the breast are tintured with a very fair, glossy, and beautiful claret colour, with a few small transverse lines of black. The feathers on the back are brown, the edges more pale or ash coloured; the scapular feathers, and those under the fore part of the wings, are finely variegated with small transverse black and white lines, beautifully dispersed like waves; the quill feathers are some of them brown, with white tips, others have their outward webs of a blackish purple; other parts, especially those beyond the covert feathers, of a lovely fine blue; some of the exterior feathers have their outward webs inclining to black, with a fine purple gloss upon the borders, on which there are a number of small light coloured spots; the rest of the wing feathers are of a beautiful party-coloured brown and white. The upper part of the tail is ash coloured; the under part, behind the vent, black. The legs and feet are of a dark lead colour, and the claws black. The young of both sexes are gray, and this hue they retain till February, when the plumage of the male begins to assume its variegated tints. He is said to retain his bright colours till the end of July, and then to become dark and gray, so as scarcely to be distinguished from the female.

Widgeons are common in Cambridgeshire, the Isle of Ely, &c. where the male is called the Widgeon, and the female the Whewer. They feed upon wild periwinkles, grass, weeds, &c. which grow at the bottom of rivers and lakes. Their flesh has a very delicious taste, not inferior to teal, or wild ducks.

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Is the most easily reared of all our domestic animals. The WILD DUCK, or MALLARD, differs, in many respects, from the tame; and in them there

is a still greater variety than among the domestic kinds.

The most obvious distinction between wild and tame Ducks is in the colour of their feet; those of the tame Duck being black; those of the wild Duck yellow. The difference between wild Ducks among each other, arises as well from their size, as the nature of the place they feed in. Sea Ducks, which feed in the salt water, and dive much, have a broad bill, bending upwards, a large hind toe, and a long blunt tail. Pond Ducks, which feed in splashes, have a straight and narrow bill, a small hind toe, and a sharp pointed train. The former are called, by our decoy-men, foreign Ducks; the latter are supposed to be natives of England. In this tribe, we may rank, as natives of Europe, the EIDER DUCK, which is double the size of a common Duck, with a black bill; the VELVET DUCK, not so large, and with a yellow bill; the SCOTER DUCK, or BLACK DIVER, with a knob at the base of a yellow bill; the TUFTED DUCK, adorned with a thick crest; the SCAUP DUCK, less than the common Duck, with the bill of a grayish blue colour; the GOLDEN EYE, with a large white spot at the corners of the mouth, resembling an eye; the SHELDRAKE, with the bill of a bright red, and swelling into a knob; the MALLARD, which is the stock whence our tame breed has probably been produced; the SHOVELLER, which has a bill three inches long, and remarkably broad at the end; the PINTAIL, with the two middle feathers of the tail three inches longer than the rest; the POCHARD, with the head and neck of a bright bay; the LONG-TAILED DUCK, the general colour of whose plumage is deep chocolate, and the outer feathers of the tail, which are white, four inches longer than the rest;

the WIDGEON, and lastly, the TEAL. Of these we shall describe more particularly the Eider Duck, the Widgeon, and the Teal.

THE EIDER DUCK



HAS a black cylindrical bill, and the feathers of the forehead and cheeks advance far into the base. In the male, the feathers of part of the head, the lower part of the breast, the belly, and the tail, are black, as are also the quill feathers of the wings; and nearly all the rest of the body is white. The legs are green. The female is of a reddish brown, variously marked with black and dusky streaks. It is principally found in the western isles of Scotland, on the coasts of Norway, Iceland, and Greenland, and in many parts of North America.

The female lays from three to five eggs (sometimes as many as eight), which are large, smooth, glossy, and of a pale olive colour. She generally lays among stones, or plants, near the sea, but in a soft bed of down, which she plucks from her own breast. Sometimes two females will lay their eggs in the same nest, in which case they always agree remarkably well. As long as the female is sitting, the male continues on watch near the shore; but as

soon as the young are hatched he leaves them. The mother, however, remains with them a considerable time afterwards. It is curious to observe her manner of leading them out of the nest, almost as soon as they creep from the eggs. Going before them to the shore, they trip after her: and, when she comes to the waterside, she takes them on her back, and swims a few yards with them, when she dives; and the young ones are left floating on the surface, obliged to take care of themselves. They are seldom seen afterwards on land.

In Iceland the Eider Ducks generally build their nests on small islands, not far from the shore; and sometimes even near the dwellings of the natives, who treat them with so much attention and kindness as to render them nearly tame. From these birds is produced the soft down so well known by the name of eider, or edder down, which is so light and expansive that a couple of handfuls will fill a down quilt, which, in cold countries, is used instead of a quilt or blanket. In the breeding season the birds pluck it from their breasts to line their nests, and make a soft bed for the young ones. When the natives come to the nest, they carefully remove the female and take away the superfluous down and eggs; after this, they replace the female: she then begins to lay afresh, and covers her eggs with new down, which she also plucks from her body; when this is scarce, or she has no more left, the male comes to her assistance, and covers the eggs with his down, which is white, and easily distinguished from that of the female. When the young ones leave the nest, which is about an hour after they are hatched, it is once more plundered.—The most eggs and the best down are got during the first three weeks of their

laying; and it has generally been observed, that they lay the greatest number of eggs in rainy weather. One female, during the time of laying, generally gives half a pound of down; which, however, is reduced one half after it is cleaned. When pure it is sold in Lapland for two rix dollars a pound. The Iceland Company at Copenhagen generally export from Iceland about one thousand five hundred or two thousand pounds weight of this down, besides what is privately purchased by foreigners.

The Greenlanders kill these birds with darts; pursuing them in their little boats, watching their course by the air bubbles when they dive, and always striking them when they rise to the surface wearied. The flesh is valued as food, and their skins are made into warm and comfortable undergarments.

THE WIDGEON.



THIS bird weighs about twenty-two ounces; it has a black nail at the end of the upper mandible of the bill, the other part of which is of a lead colour; the structure of the head and mouth very much resembles the common wild duck, only the head does not seem to be quite so large, in proportion to the body, which also appears of a finer shape, and the wings longer. The crown of the head towards

the base of the bill is of a pale pink colour, inclining to a reddish white; the other parts of the head and neck are red; the sides of the body and the upper part of the breast are tintured with a very fair, glossy, and beautiful claret colour, with a few small transverse lines of black. The feathers on the back are brown, the edges more pale or ash coloured; the scapular feathers, and those under the fore part of the wings, are finely variegated with small transverse black and white lines, beautifully dispersed like waves; the quill feathers are some of them brown, with white tips, others have their outward webs of a blackish purple; other parts, especially those beyond the covert feathers, of a lovely fine blue; some of the exterior feathers have their outward webs inclining to black, with a fine purple gloss upon the borders, on which there are a number of small light coloured spots; the rest of the wing feathers are of a beautiful party-coloured brown and white. The upper part of the tail is ash coloured; the under part, behind the vent, black. The legs and feet are of a dark lead colour, and the claws black. The young of both sexes are gray, and this hue they retain till February, when the plumage of the male begins to assume its variegated tints. He is said to retain his bright colours till the end of July, and then to become dark and gray, so as scarcely to be distinguished from the female.

Widgeons are common in Cambridgeshire, the Isle of Ely, &c. where the male is called the Widgeon, and the female the Whewer. They feed upon wild periwinkles, grass, weeds, &c. which grow at the bottom of rivers and lakes. Their flesh has a very delicious taste, not inferior to teal, or wild ducks.

THE TEAL.



THIS is the smallest bird of the duck kind: it is common in England in the winter months; and some imagine that it breeds here as well as it does in France. It does not usually weigh more than twelve ounces; and it measures about sixteen inches from the point of the bill to the tip of the tail, and from the extremity of each wing, when extended, nearly two feet. The bill is of a dark brown colour, the head is considerably lighter, inclining to a bay, with a large white stripe over each eye, bending downwards, towards the back part of the head: the back and sides under the wings are curiously varied with lines of white and black. The breast is of a dirty coloured yellow, interspersed with dusky transverse lines; the belly more bright, with yellowish brown spots: the quill feathers of the wings are of a dusky brown, with white edges; the covert feathers appear of a fine shining green, with their tips white; the scapular feathers are more inclining to an ash colour; the legs and feet are brown, the claws black. These birds feed on cresses, chervil, and other weeds, and also on seeds and some kinds of water insects.

The flesh is a great delicacy, and has a less fishy taste than any other of the wild duck tribe.

The female constructs her nest of reeds interwoven with grass, and is said to make it among rushes, that it may rise or fall with the varying height of the water.

These are the most common birds of the duck kind among ourselves; but who can describe the amazing variety of this tribe, if he extends his view to the different quarters of the world? The most noted of the foreign tribe are, the MUSCOVY DUCK, or, more properly speaking, the MUSK DUCK, so called from a supposed musky smell, with naked skin round the eyes, and which is a native of Africa. The BRAZILIAN DUCK, which is of the size of a goose, all over black, except the tips of the wings. The AMERICAN WOOD DUCK, with a variety of beautiful colours, and a plume of feathers, which falls from the back of the head like a friar's cowl.

The CHINESE or MANDARIN DUCK, is somewhat less than a widgeon, but remarkable for its elegance and beauty. The prevailing colour of its plumage on the upper parts is dusky brown; the scapulars, however, are black, and at the bend of the wing are three transverse streaks of black, and two of white alternately. The neck and breast are chestnut; the beak and legs are red, and the head is adorned with a fine expanded crest, the base of which is white, and the upper part of a beautiful glossy green.

These, and many others, might be added, were increasing the number of names the way to enlarge the sphere of our comprehension.

All these live in the manner of our domestic Ducks, keeping together in flocks in the winter, and flying in pairs in summer; bringing up their young

by the waterside, and leading them to their food as soon as out of the shell. Their nests are usually built among heath or rushes, not far from the water; and they lay twelve, fourteen, or more eggs before they sit; yet this is not always their method; the dangers they continually encounter from their situation sometimes oblige them to change their manner of building; and their awkward nests are often seen exalted on the tops of trees. This must be a very great labour to perform, as the Duck's bill is but ill formed for building a nest, and giving the materials of which it is composed a sufficient stability to stand the weather. The nest, whether high or low, is generally composed of the longest grass, mixed with heath, and is lined within with the bird's own feathers.

As these animals possess the faculties of flying and swimming, so they are in general birds of passage, and it is most probable perform their journeys across the ocean as well on the water as in the air. Those that migrate to this country, on the approach of winter, are seldom found so well tasted or so fat as the fowls that continue with us the year round: their flesh is often lean, and still oftener fishy; which flavour it has probably contracted in the journey, as their food in the lakes of Lapland, whence they descend, is generally of the insect kind.

As soon as they arrive among us, they are generally seen flying in flocks, to make a survey of those lakes where they intend to take up their residence for the winter. Lakes, with a marsh on one side, and a wood on the other, are seldom without vast quantities of wild fowl. The greatest quantities are taken in decoys; which, though well known near

London, are yet untried in the remoter parts of the country. The manner of making and managing a decoy is as follows:—

A place is to be chosen for this purpose far remote from the common highway, and all noise of people. When the place is chosen, the pool, if possible, is to be planted round with willows, unless a wood answers the purpose of shading it on every side. On the south and north side of this pool are two, three, or four ditches or channels, made broad towards the pool, and growing narrower till they end in a point. These channels are to be covered over with nets supported by hooped sticks bending from one side to the other; so that they form a vault or arch growing narrower and narrower to the point, where it is terminated by a tunnel-net, like that in which fish are caught in wears. Along the banks of these channels so netted over, which are called pipes, many hedges are made of reeds slanting to the edge of the channel, the acute angles to the side next the pool. The whole apparatus also is to be hidden from the pool by a hedge of reeds along the margin, behind which the fowler manages his operations. The place being fitted in this manner, the fowler is to provide himself with a number of wild ducks made tame, which are called decoys. These are always to be fed at the mouth or entrance of the pipe, and to be accustomed to come at a whistle.

As soon as the evening is set in, the *decoy rises*, as they term it, and the wild fowl feed during the night. If the evening be still, the noise of their wings, during their flight, is heard at a very great distance, and produces no unpleasing sensation. The fowler, when he finds a fit opportunity, and sees his decoy covered with fowl, walks about the

pool, and observes into what pipe the birds gathered in the pool may be enticed or driven. Then casting hemp seed, or some such seed as will float on the surface of the water, at the entrance and up along the pipe, he whistles to his decoy ducks, who instantly obey the summons, and come to the entrance of the pipe, in hopes of being fed as usual. Thither also they are followed by a whole flock of wild ones, who little suspect the danger preparing against them. The wild ducks, therefore, pursuing the decoy ducks, are led into the broad mouth of the channel or pipe, nor have the least suspicion of the man, who keeps hidden behind one of the hedges. When they have got up the pipe, however, finding it grow more and more narrow, they begin to suspect danger, and would return back; but they are now prevented by the man, who shows himself at the broad end below. Thither, therefore, they dare not return; and rise they may not, as they are kept by the net above from ascending. The only way left them, therefore, is the narrow-funneled net at the bottom; into this they fly, and there they are taken.

It often happens, however, that the wild fowl are in such a state of sleepiness or dozing, that they will not follow the decoy ducks. Use is then generally made of a dog who is taught his lesson. He passes backward and forward between the reed-hedges, in which there are little holes, both for the decoy man to see, and for the little dog to pass through. This attracts the eye of the wild fowl; who, prompted by curiosity, advance towards this little animal, while he all the time keeps playing among the reeds, nearer and nearer the funnel, till they follow him too far to recede. Sometimes the dog will not attract their attention till a red hand-

kerchief, or something very singular, be put about him. The decoy ducks never enter the funnel-net with the rest, being taught to dive under water as soon as the rest are driven in.

To this manner of taking wild fowl in England, we will subjoin another still more extraordinary, frequently practised in China. Whenever the fowler sees a number of Ducks settled in any particular splash of water, he sends off two or three gourds to float among them. These gourds resemble our pompions; but, being made hollow, they swim on the surface of the water; and on one pool there may sometimes be seen twenty or thirty of these gourds floating together. The fowl at first are a little shy at coming near them; but by degrees they come nearer; and as all birds at last grow familiar with a scarecrow, the Ducks gather about these, and amuse themselves by whetting their bills against them. When the birds are as familiar with the gourds as the fowler could wish, he then prepares to deceive them in good earnest. He hollows out one of these gourds large enough to put his head in; and, making holes to breathe and see through, he claps it on his head. Thus accoutred, he wades slowly into the water, keeping his body under, and nothing but his head in the gourd above the surface; and in that manner moves imperceptibly towards the fowls, who suspect no danger. At last, however, he fairly gets in among them; while they, having been long used to see gourds, take not the least fright while the enemy is in the very midst of them; and an insidious enemy he is; for ever as he approaches a fowl, he seizes it by the legs, and draws it in a jerk under water. There he fastens it under his girdle, and goes to the next, till he has

thus loaded himself with as many as he can carry away. When he has got this quantity, without ever attempting to disturb the rest of the fowls on the pool, he slowly moves off again; and, in this manner, pays the flock three or four visits in a day. Of all the various artifices for catching fowl, this seems likely to be attended with the greatest success, and is the most practised in China.

THE PELICAN



Is properly a foreign bird, but as the genus includes some species which are found in our European climates, we have introduced it between the domestic and foreign animals of this order. The distinguishing characters of this genus is a naked gullet, and capable of great distention.

The GREAT WHITE PELICAN OF AFRICA is much

larger than a swan. Its four toes are all webbed together; and its neck, in some measure, resembles that of a swan: but that singularity in which it differs from all other birds, is in the bill, and the great pouch underneath, which are wonderful, and demand a distinct description. This enormous bill is fifteen inches from the point to the opening of the mouth, which is a good way back behind the eyes. The base of the bill is somewhat greenish; but it varies towards the end, being of a reddish blue. To the lower edges of the under chap hangs a bag, reaching the whole length of the bill to the neck, which is said to be capable of containing fifteen quarts of water. This bag the bird has a power of wrinkling up into the hollow of the under chap; but, by opening the bill, and putting one's hand down into the bag, it may be distended at pleasure. It is not covered with feathers, but a short downy substance, as smooth and as soft as satin. Tertre affirms, that this pouch will hold as many fish as will serve sixty hungry men for a meal. Such is the formation of this extraordinary bird, which is a native of Africa and America. It was once also known in Europe, particularly in Russia; but it seems to have deserted our coasts.

The plumage of the Pelican which is now in the Tower is, all but the quill feathers of the wings, which are black, of an extremely light and delicate flesh colour, varied only by occasional darker tinges. Except on the temples, which are naked and flesh coloured, the head and upper part of the neck are clothed with a short down. The upper mandible is of a dull yellow in the middle, with a reddish tinge towards the edges, and a blood red spot at its curved extremity; and the pouch is of a bright straw colour.

In the Island of Manilla the Pelicans are of a rose colour, and in America they are brown. They are all torpid and inactive to the last degree, so that nothing can exceed their indolence but their gluttony. It is only from the stimulations of hunger that they are excited to labour; for otherwise they would continue always in fixed repose. When they have raised themselves about thirty or forty feet above the surface of the sea, they turn their head, with one eye downwards, and continue to fly in that posture. As soon as they perceive a fish sufficiently near the surface, they dart down upon it with the swiftness of an arrow, seize it with unerring certainty, and store it up in their pouch. They then rise again, though not without great labour, and continue hovering and fishing, with their head on one side, as before.

This work they continue, with great effort and industry, till their bag is full: and then they fly to land, to devour and digest, at leisure, the fruits of their industry. This, however, it would appear, they are not long performing; for, towards night, they have another hungry call; and they again, reluctantly, go to labour.

Sometimes, they are said to assemble in large numbers, to act in concert, and to manœuvre with great skill, for the purpose of securing an abundant prey. This they accomplish by forming a circular line, and gradually narrowing the included space, till the fishes are driven within a narrow compass. They then all plunge into the water at once, on a given signal, fill their pouches with the spoil, and then return to the land, to enjoy themselves at leisure.

Their life is spent between sleeping and eating,

and they are as foul as they are voracious, as they are, every moment, voiding excrements in heaps, as large as one's fist. The female makes no preparation for her nest, nor seems to choose any place in preference to lay in, but drops her eggs on the bare ground, to the number of five or six, and there continues to hatch them. Her little progeny, however, seem to call forth some maternal affections: for its young have been taken and tied by the leg to a post, and the parent bird has been observed for several days to come and feed them; remaining with them the greatest part of the day, and spending the night on the branch of a tree that hung over them. By these means they became so familiar that they suffered themselves to be handled; and they very readily accepted whatever fish was given to them. These they always put first into their pouch, and then swallowed them at leisure.

With all the seeming indolence of this bird, it is not entirely incapable of instruction in a domestic state. Father Raymond assures us, that he has seen one so tame and well educated among the native Americans, that it would go off in the morning, at the word of command, and return before night to its master, with its great paunch distended with plunder; a part of which the savages would make it disgorge, and a part they would permit it to reserve for itself.

"The Pelican," as Faber relates, "is not destitute of other qualifications. One which was brought alive to the Duke of Bavaria's court, where it lived forty years, seemed to be possessed of very uncommon sensations. It was much delighted in the company and conversation of men, and in music, both vocal and instrumental; for it would willingly

stand," says he, " by those that sung or sounded the trumpet ; and stretching out its head, and turning its ear to the music, listened very attentively to its harmony, though its own voice was little pleasanter than the braying of an ass."

Gesner tells us, that the Emperor Maximilian had a tame Pelican, which lived for above eighty years, and which always attended his army on their march.

It was once believed that the Pelican feeds her young with her own blood ; a fable for which we are indebted to some of the early fathers of the church, and which has been perpetuated by poets and heralds. The fact is, that the parent bird feeds the young by pressing its full pouch against its breast, and thus expelling a portion of the contents. The appearance of the bird when in this attitude, with the bloody spot on the end of its bill closely pressed against the delicate plumage of its breast, may, it has been well observed, readily account for the prevalence of such an idea in the minds of superficial observers.



THE FRIGATE PELICAN, OR MAN-OF-WAR BIRD

Is chiefly met with between the tropics. It is the size of a large fowl. The bill is slender, five inches long, from the base of which a dark reddish skin spreads on each side of the head, and a large bag hangs down the throat; the whole plumage is brownish black, the tail is long, and much forked. It is often found above a hundred and sometimes two hundred leagues from land, and sometimes settles on the masts of ships. Its amazing length of wing, which is not less than fourteen feet, enables it to take immense flights; and, when it is not successful in fishing, it attacks the gulls and other water-fowl, and makes them disgorge the fish which they have taken.

THE CORVORANT, OR CORMORANT,



Is about the size of a large Muscovy duck, and may be distinguished by its four toes being united by membranes together; and by the middle toe being

toothed or notched, like a saw, to assist it in holding its fishy prey. The head and neck of this bird are of a sooty blackness, and the body thick and heavy, more inclining in figure to that of the goose than the gull. As soon as the winter approaches, they are seen dispersed along the seashore, and ascending up the mouths of fresh water rivers, carrying destruction to all the finny tribe. They are most remarkably voracious, and have a most sudden digestion. Their appetite is for ever craving, and never satisfied. This gnawing sensation may probably be increased by the great quantity of small worms that fill their intestines, and which their increasing gluttony contributes to engender.

This bird has the most rank and disagreeable smell, and is more foetid than even carrion, when in its most healthful state. It is seen as well by land as sea; it fishes in fresh water lakes, as well as in the depths of the ocean; it builds in the cliffs of rocks, as well as on trees; and preys not only in the day time, but by night.

Its indefatigable nature, and its great power in catching fish, were, probably, the motives that induced some nations to breed this bird up tame, for the purposes of fishing. The description of their manner of fishing is thus delivered by Faber.

“ When they carry them out of the rooms where they are kept, to the fishpools, they hoodwink them, that they may not be frightened by the way. When they are come to the rivers, they take off their hoods; and having tied a leather thong round the lower part of their necks, that they may not swallow down the fish they catch, they throw them into the river. They presently dive under water; and there, for a long time, with wonderful swiftness, pursue the

fish ; and, when they have caught them, rise to the top of the water, and pressing the fish lightly with their bills, swallow them ; till each bird hath, after this manner, devoured five or six fishes. Then their keepers call them to the fist, to which they readily fly ; and, one after another, vomit up all their fish, a little bruised with the first nip given in catching them. When they have done fishing, setting the birds on some high place, they loose the string from their necks, leaving the passage to the stomach free and open ; and, for their reward, they throw them part of their prey ; to each one or two fishes, which they will catch most dexterously, as they are falling in the air."

At present, the Corvorant is trained up in every part of China for the same purpose. " It is very pleasant to behold with what sagacity they portion out the lake or the canal where they are upon duty. When they have found their prey, they seize it with their beak by the middle, and carry it without fail to their master. When the fish is too large, they then give each other mutual assistance: one seizes it by the head, the other by the tail, and in this manner carry it to the boat together. They have always, while they fish, a string fastened round their throats, to prevent them from devouring their prey." Such was formerly the practice in England ; and as late as the reign of Charles I. there was an officer of the household who bore the title of Master of the Cormorants.

THE SHAG,

WHICH the French call the Lesser Corvorant, is another of the pelican genus. The COMMON SHAG is in length two feet. The general colour of its

plumage is black, the belly is dusky, and the head and neck glossed with green. Like the corvorant it builds in trees. The CRESTED SHAG is somewhat less than the preceding, and is less common. The VIOLET and RED-FACED SHAGS are both natives of Kamtschatka; and SPOTTED and CARUNCULATED SHAGS are found in New Zealand. Besides these, there are several other foreign species, particularly in Africa, where there are two kinds of Shags not larger than a teal.

THE GANNET, OR SOLAN GOOSE,



Is of the size of a tame goose, but its wings much longer, being six feet over. The bill is six inches long, straight almost to the point. It differs from the corvorant in size, being larger; in its colour, which is chiefly dirty white, with a cinereous tinge; and by its having no nostrils, but in their place a long furrow that reaches almost to the end of the bill. From the corner of the mouth is a narrow slip of black bare skin, that extends to the hind part of the head; beneath the skin is another that,

like the pouch of the Pelican, is dilatable, and of size sufficient to contain five or six entire herrings, which in the breeding season it carries at once to its mate or its young.

These birds, which subsist entirely upon fish, chiefly resort to those uninhabited islands where their food is found in plenty, and men seldom come to disturb them. The islands to the north of Scotland, the Skelig islands off the coasts of Kerry, in Ireland, and those that lie in the north sea off Norway, abound with them. But it is on the Bass Island, in the Firth of Edinburgh, where they are seen in the greatest abundance. "It is scarcely possible to walk there without treading on them: the flocks of birds upon the wing are so numerous as to darken the air like a cloud; and their noise is such that one cannot, without difficulty, be heard by the person next to him."

The Gannet is a bird of passage. In winter it seeks the more southern coasts of Cornwall, hovering over the shoals of herrings and pilchards that then come down from the northern seas: its first appearance in the northern islands is in the beginning of spring; and it continues to breed till the end of summer. But, in general, its motions are determined by the migrations of the immense shoals of herrings that come pouring down at that season through the British Channel, and supply all Europe as well as this bird with their spoil. The Gannet assiduously attends the shoal in their passage, keeps with them in their whole circuit round the island, and shares with the fishermen this exhaustless banquet. As it is strong of wing, it never comes near the land, but is constant to its prey. The young Gannet is accounted a great dainty by the Scots, and sold very dear.

These birds breed but once a year, on the highest

and steepest rocks near the sea, and lay only one egg, but if that be taken away, they lay another; and if that be also taken away, then a third; but never more for that season. Their eggs are white, and rather less than those of the common goose; and their nest large, composed of such substances as are found floating on the surface of the sea. The young birds during the first year differ greatly in colour from the old ones; being of a dusky hue, speckled with numerous triangular white spots.

These birds, when they pass from place to place, unite in small flocks of from five to fifteen; and, except in very fine weather, fly low, near the shore, but never pass over it; doubling the capes and projecting parts, and keeping nearly at an equal distance from the land. During their fishing they rise high into the air, and sail aloft over the shoals of herrings or pilchards, much in the manner of kites. When they observe the shoal crowded thick together, they close their wings to their sides and precipitate themselves head foremost into the water, dropping almost like a stone. Their eye in this act is so correct, that they never fail to rise with a fish in their mouth. If in flying away with one, they see another they like better, they immediately drop the first to seize it. The force with which it descends on its prey may be imagined from a circumstance which occurred, some years ago, at Penzance, in Cornwall. As some pilchards were lying on a fir plank, a Gannet darted down on them with such impetuosity as to strike its bill quite through the board, which was an inch and a quarter thick, and, as may be supposed, to kill itself on the spot. The St. Kildans sometimes take them by fastening a herring to a plank, and setting it afloat. The bird swoops down, and breaks its neck by its violence.

THE BOOBY

Is also a species of the Pelican. The upper parts of the plumage are brown; the breast and belly white. It is found in several parts of America, and is described as a very simple bird.

THE ALBATROSS

Is one of the largest and most formidable birds of Africa and America. The largest, which is called the WANDERING ALBATROSS, is rather larger than a swan; and its wings, when extended, ten feet from tip to tip. The bill, which is six inches long, is yellowish, and terminates in a crooked point. The top of the head is of a bright brown; the back is of a dirty, deep spotted brown; and the belly, and under the wings, is white. The toes, which are webbed, are of a flesh colour.

This bird is an inhabitant of the tropical climates, and also beyond them, as far as the Straits of Magellan, in the South Seas. It not only eats fish, but also such small waterfowl as it can take by surprise. It preys, as the gull kind do, upon the wing, and chiefly pursues the flying fish that are forced from the sea by the dolphins.

The Albatross seems to have a peculiar affection for the penguin, and a pleasure in its society. They are always seen to choose the same places of breeding; some distant, uninhabited island, where the ground slants to the sea, as the penguin is not formed either for flying or climbing. In such places their nests are seen together, as if they stood in need of mutual assistance and protection. In the middle,

on high, the Albatross raises its nest on heath, sticks, and long grass, about two feet above the surface; and round this the penguins make their lower settlements, rather in holes in the ground; and most usually eight penguins to one Albatross.

There are about three other species of Albatross, all of them smaller than the preceding. The upper parts of the plumage are a dusky blue black, and the rump and under parts white; but what peculiarly distinguishes it is, that the bill, which is four inches long, is black, all but the upper ridge, which is yellow quite to the tip. It inhabits the South Seas within the tropics.

THE SKIMMER, OR CUTWATER,

Is twenty inches in length, and in breadth three feet seven inches. The bill is of a very singular structure, the upper chap or mandible being above an inch shorter than the under, and the upper shuts into it, as a razor into its handle. The base of the bill is red, the rest black; and on the sides are several furrows. The forehead, chin, and all the under parts, are white; the upper parts of the plumage black, with a bar of white across each wing. The tail is short and forked. It inhabits all America; is commonly on the wing, and skims along the surface to catch the small fish on which it feeds. It is frequently known by the name of the Razor-bill.

THE PENGUIN GENUS

INCLUDES about nine species, which seem to hold the same place in the southern parts of the world as the auks do in the north, neither of them having

ever been observed within the tropics. The wings of the larger species do not enable them to rise out of the water, but serve them rather as paddles to help them forward when they attempt to move swiftly, and in a manner walk along the surface of the water. Even the smaller kinds seldom fly by choice; they flutter their wings with the swiftest efforts, without making way; and though they have but a small weight of body to sustain, yet they seldom venture to quit the water, where they are provided with food and protection.

As the wings of the Penguin tribe are unfitted for flight, the legs are still more awkwardly adapted for walking. This whole tribe have all above the knee hid within the belly; and nothing appears but two short legs, or feet, as some would call them, that seem stuck under the rump, and upon which the animal is very awkwardly supported. They seem, when sitting, or attempting to walk, like a dog that has been taught to sit up or to move a minuet. Their short legs drive the body in progression from side to side; and were they not assisted by their wings, they could scarcely move faster than a tortoise.

This awkward position of the legs, which so unqualifies them for living upon land, adapts them admirably for a residence in water, in that, the legs placed behind the moving body, push it forward with greater velocity; and these birds, like Indian canoes, are the swiftest in the water, by having their paddles in the rear.

They are also covered more warmly all over the body with feathers than any other birds whatever; so that the sea seems entirely their element.

The PATAGONIAN PENGUIN weighs about forty pounds, and is four feet three inches in length. The

bill measures four inches and a half, but is slender. The head, throat, and hind part of the neck, are brown; the back of a deep ash colour; and all the under parts white. The MAGELLANIC PENGUIN is about the size of a goose; the upper parts of the plumage are black, and the under white. These birds walk erect with their heads on high, their fin-like wings hanging down like arms; so that to see them at a distance, they look like so many children with white aprons. Hence they are said to unite in themselves the qualities of men, fowls, and fishes. Like men, they are upright; like fowls, they are feathered; and, like fishes, they have fin-like instruments, that beat the water before, and serve for all the purposes of swimming rather than flying.

There are CRESTED PENGUINS at Falkland's Island, which are very beautiful birds. This is sometimes called the Hopping Penguin, or Jumping Jack, from the circumstance of its leaping quite out of the water, often to the height of three or four feet, when it meets an obstacle to its course.

At New Zealand there is a species of Penguin, which is not larger than a teal.

All the species feed upon fish; and seldom come ashore, except in the breeding season. Their flesh is rank and fishy; though our sailors say, that *it is pretty good eating*. In some the flesh is so tough, and the feathers so thick, that they stand the blow of a scimitar without injury.

The Penguin lays but one egg; and, in frequented shores, is found to burrow like a rabbit: sometimes three or four take possession of one hole, and hatch their young together. The egg of the Penguin is very large for the size of the bird, that of the smaller sorts being generally found bigger than that of a goose.

THE TROPIC BIRD

INCLUDES only three known species, which are all distinguished by a wedge-like tail, the two middle feathers extending a vast length beyond the others.

The COMMON TROPIC BIRD is about the size of a widgeon. The length to the tip of the two long feathers is nearly three feet. The bill is three inches long, and red; the head, neck, and under parts of the body, are quite white: the upper parts of the plumage white also, but marked with black lines. The two middle feathers of the tail measure twenty inches, and project fifteen inches beyond the rest. It takes its name from being chiefly found within the tropics. It frequently flies very high, but generally attends upon the flying fishes in their escape from their watery enemies; and they have now and then been found in calm weather supinely floating on the backs of the drowsy tortoises. Their flesh is not good, but is sometimes eaten by the hungry sailors.

On Palmerston Island there is a BLACK-BILLED TROPIC BIRD; and at Mauritius there is a Tropic Bird with a bill and a tail of a beautiful rose colour.

THE DARTER

Is distinguished by a peculiarly long and slender neck, and includes three species.

The WHITE-BELLIED DARTER is scarcely so large as a mallard, but its neck is so long that it measures not less than two feet ten inches. The bill is three inches long, straight, and pointed. The neck is covered with downy soft feathers, of a reddish gray:

the upper parts of the plumage are dusky black, dashed with white; the under parts pure silvery white. It is a native of Brazil, and is extremely expert at catching fish.

The **BLACK-BELLIED DARTER** is the size of the common duck. The head, neck, and breast are light brown; the back, scapulars, &c. marked with stripes of black and white; the quill feathers, belly, thighs, and tail are deep black. The four toes are united like those of the corvorant. In the island of Ceylon and Java it sits on the shrubs that hang over the water, and in a country where people are so apprehensive of serpents, it often terrifies the passengers by darting out its long and slender neck, which in their surprise they mistake for the attack of some fatal reptile.



CHAP. VII.

Of Fishes in general...Of Cetaceous Fishes.. The WHALE...The Fin Fish...The Narwal, or Sea Unicorn...The SPERMACEI WHALE...The DOLPHIN...Grampus, Porpoise, &c.

THE number of fish to which we have given names, and with the figure of which at least we are a little acquainted, is, according to Linnæus, above four hundred. The majority of these are confined to the sea, and would expire in the fresh water, though there are a few which annually swim up the rivers, to deposit their spawn.

Wonderful as it may appear to see creatures existing in a medium so dense that men, beasts, and birds must inevitably perish in it, yet experience proves that, besides those species which we are in the daily habit of seeing, the very depths of the immense ocean contain myriads of animated beings, to whose very form we are almost strangers, and of whose dispositions and manners we are still more ignorant. It is probable, indeed, that the fathomless recesses of the deep contain many kinds of fish that are never seen by man. In their construction, modes of life, and general design, the watery tribes are perhaps still more astonishing than the inhabitants of either the land or air.

The structure of fish, and their adaptation to the element in which they are to live, are eminent proofs of divine wisdom. Most of them have the same external form, sharp at each end, and swelling in the middle, by which configuration they are enabled to traverse their native element with greater ease and swiftness. From their shape, men originally took the idea of those vessels which are intended to sail

with the greatest speed; but the progress of the swiftest sailing ship, with the advantage of a favourable wind, is far inferior to that of fish. Ten or twelve miles an hour is no small degree of rapidity in the sailing of a ship; yet any of the larger species of fish would soon overtake her, play round as if she did not move, and even advance considerably before her.

The fins of fish are denominated from their situations. The pectoral fins are placed at a little distance behind the opening of the gills, and are large and strong; and serve as well to balance the body as to assist the motion of the fish. The ventral fins are placed towards the lower part of the body, under the belly, and serve chiefly to raise or depress the fish in the water. The dorsal fins are situated on the ridge of the back, and are very large in flat fish: their use, like the pectoral ones, is to keep the body in equilibrio, as well as to contribute to its progressive motion. The anal fins are placed between the vent and the tail, enabling the fish to keep an upright position.

The chief instruments of a fish's motion are the fins, which in some fish are more numerous than in others. The fish, in a state of repose, spreads all its fins, and seems to rest upon its pectoral and ventral fins near the bottom: if the fish folds up, for it has the power of folding, either of its pectoral fins, it inclines to the same side; folding the right pectoral fin, its body inclines to the right side; folding the left fin, it inclines to that side in turn. When the fish desires to have a retrograde motion, striking with the pectoral fins in a contrary direction effectually produces it. If the fish desires to turn, a blow from the tail sends it about; but if the tail strikes

both ways, then the motion is progressive. In pursuance of these observations, if the dorsal and ventral fins be cut off, the fish reels to the right and left, and endeavours to supply its loss by keeping the rest of its fins in constant employment. If the right pectoral fin be cut off, the fish leans to that side; if the ventral fin on the same side be cut away, then it loses its equilibrium entirely. When the tail is cut off, the fish loses all motion, and gives itself up to where the water impels it.

The senses of fishes are remarkably imperfect; and, indeed, that of sight is almost the only one which, in general, they may be truly said to possess. But this is, in some degree, compensated by their astonishing longevity, several species being known to live more than a hundred years. Their longevity is still exceeded by their singular fecundity; for a single cod, for instance, produces at a birth two-thirds as many young ones as there are inhabitants in all Great Britain, above nine millions. The flounder produces at once above a million, and the mackerel five hundred thousand.

The spawn continues in its egg state in some fishes longer than in others, and this generally in proportion to their size. The young of the salmon continues in egg from December to April; the carp, three weeks; and the little gold-fish, from China, is produced still quicker. The young spawn are the prey of all the inhabitants of the water, even of their own parents; and scarcely one in a thousand escapes the numerous perils of its youth.

Such is the general picture of these heedless and hungry creatures; but there are some in this class, living in the waters, that are possessed of finer organs and higher sensations; that have all the tenderness

of birds or quadrupeds for their young; that nurse them with constant care, and protect them from every injury. Of this class are the *Celaceous* order, or the fishes of the whale kind. There are others, though not capable of nursing their young, yet that bring them alive into the world, and defend them with courage and activity. These are the *Cartilaginous* kinds, or those which have gristles instead of bones. But the fierce unmindful tribe we have been describing, that leave their spawn without any protection, are called the *Spinous* or bony kinds, from their bones resembling the sharpness of thorns.

Of Cetaceous Fishes.

THIS tribe is composed of the WHALE, the CACHALOT, the DOLPHIN, the GRAMPUS, and the PORPESSE. All these resemble quadrupeds in their internal structure, and in some of their appetites and affections. Like quadrupeds, they have lungs, a midriff, a stomach, intestines, liver, spleen, bladder, and parts of generation; their heart also resembles that of quadrupeds, with its partitions closed up as in them, and driving red and warm blood in circulation through the body; and to keep these parts warm, the whole kind are also covered between the skin and the muscles with a thick coat of fat or blubber.

As these animals breathe the air, it is obvious that they cannot bear to be any long time under water. They are constrained, therefore, every two or three minutes, to come up to the surface to take breath, as well as to spout out through their nostril, for they have but one, that water which they sucked in while gaping for their prey.

But it is in the circumstances in which they con-

tinue their kind, that these animals show an eminent superiority. Other fish deposit their spawn, and leave the success to accident; these never produce above one young, or two at the most; and this the female suckles entirely in the manner of quadrupeds, her breasts being placed, as in the human kind, above the navel. Their tails also are different from those of all other fish: they are placed so as to lie flat on the surface of the water; while the other kinds have them, as we every day see, upright or edgeways. This flat position of the tail enables them to force themselves suddenly to the surface of the water to breathe, which they are continually constrained to do.

THE WHALE.



OF the Whale, properly so called, there are no less than seven different kinds; all distinguished from each other by their external figure or internal conformation. The GREAT GREENLAND WHALE, without a back fin, and black on the back; the ICELAND WHALE, without a back fin, and whitish on the back; the NEW ENGLAND WHALE, with a hump on the back; the WHALE WITH SIX HUMPS on the back; the FIN FISH, with a fin on the back near the tail; the PIKE-HEADED WHALE; and the ROUND-LIPPED WHALE. All these differ from each other in figure,

as their names obviously imply. They differ also somewhat in their manner of living; the Fin Fish having a larger swallow than the rest; being more active, slender, and fierce; and living chiefly upon herrings.

The GREAT GREENLAND WHALE is the fish, for taking which there are such preparations made in different parts of Europe. It is a large heavy animal, and the head alone makes a third of its bulk. It is usually found from sixty to seventy feet long. The fins on each side are from five to eight feet, composed of bones and muscles, and sufficiently strong to give speed and activity to the great mass of body which they move.

The tail is about twenty-four feet broad; and, when the fish lies on one side, its blow is tremendous. It is a curious piece of mechanism, consisting of two lobes wholly made up of strong tendinous fibres, connected with the major part of the muscular structure of the body. Of those fibres there are three distinct layers, of which the two external are in the direction of the lobes, and the internal in an opposite direction. This structure renders the tail of the Whale one of the most flexible of animal organs. It can move all ways with equal ease; every part has its own individual motion.

The skin is smooth and black, and in some places marbled with white and yellow; which, running over the surface, has a very beautiful effect. The outward or scarf skin of the Whale is no thicker than parchment; but this removed, the real skin appears, of about an inch thick, and covering the fat or blubber that lies beneath: this is from eight to twelve inches in thickness; and is, when the fish is in health, of a beautiful yellow. The muscles lie

beneath: and these, like the flesh of quadrupeds, are very red and tough.

The cleft of the mouth is above twenty feet long, which is near one third of the animal's whole length; and the upper jaw is furnished with barbs, that lie, like the pipes of an organ, the greatest in the middle, and the smallest on the sides. These compose the whalebone, absurdly called fins, the longest spars of which are found to be not less than eighteen feet. The tongue is almost immoveably fixed to the lower jaw, seeming one great lump of fat; and, in fact, it fills several hogsheads with blubber. The eyes are not larger than those of an ox; and when the crystalline humour is dried, it does not appear larger than a pea. They are placed towards the back of the head, being the most convenient situation for enabling them to see both before and behind; as also to see over them, where their food is principally found. They are guarded by eyelids and eyelashes, as in quadrupeds; and they seem to be very sharp sighted.

Nor is their sense of hearing in less perfection; for they are warned, at great distances, of any danger preparing against them. We have already observed, that the substance, called whalebone, is taken from the upper jaw of the animal, and is very different from the real bones of the Whale. The real bones are hard, like those of great land animals, are very porous, and filled with marrow. Two great strong bones sustain the under lip, lying against each other in the shape of a half-moon; some of these are twenty feet long: they are often seen in gardens set up against each other, and are usually mistaken for the ribs.

The fidelity of these animals to each other exceeds
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whatever we are told of even the constancy of birds. Some fishers, as Anderson informs us, having struck one of two whales, a male and a female, that were in company together, the wounded fish made a long and terrible resistance: it struck down a boat with three men in it, with a single blow of the tail, by which all went to the bottom. The other still attended its companion, and lent it every assistance; till, at last, the fish that was struck sunk under the number of its wounds; while its faithful associate, disdaining to survive the loss, with great bellowing, stretched itself upon the dead fish, and shared his fate.

The Whale goes with young nine or ten months, and is then fatter than usual, particularly when near the time of bringing forth. The young ones continue at the breast for a year; during which time they are called by the sailors *short-heads*. They are then extremely fat, and yield above fifty barrels of blubber. The mother, at the same time, is equally lean and emaciated. At the age of two years they are called *stunts*, as they do not thrive much immediately after quitting the breast: they then yield scarce above twenty, or twenty-four, barrels of blubber: from that time forward they are called *skull-fish*, and their age is wholly unknown. The food of the Whale is a small insect which is seen floating in those seas, and which Linnæus terms the *Medusa*. These insects are black, and of the size of a small bean, and are sometimes seen floating in clusters on the surface of the water. They are of a round form, like snails in a box, but they have wings, which are so tender that it is scarce possible to touch them without breaking. These, however, serve rather for swimming than flying. They have the taste of

raw muscles, and have the smell of burnt sugar. Inoffensive as the Whale is, it is not without enemies. There is a small animal, of the shell-fish kind, called the Whale-louse, that sticks to its body, as we see shells sticking to the foul bottom of a ship. This insinuates itself chiefly under the fins; and whatever efforts the great animal makes, it still keeps its hold, and lives upon the fat, which it is provided with instruments to arrive at.

The sword-fish, however, is the Whale's most terrible enemy. "At the sight of this little animal," says Anderson, "the Whale seems agitated in an extraordinary manner, leaping from the water as if with affright: wherever it appears, the Whale perceives it at a distance, and flies from it in the opposite direction. I have been myself," continues he, "a spectator of their terrible encounter. The Whale has no instrument of defence except the tail; with that it endeavours to strike the enemy; and a single blow taking place would effectually destroy its adversary: but the sword-fish is as active as the other is strong, and easily avoids the stroke; then bounding into the air, it falls upon its enemy, and endeavours not to pierce with its pointed beak, but to cut with its toothed edges. The sea all about is soon dyed with blood, proceeding from the wounds of the Whale; while the enormous animal vainly endeavours to reach its invader, and strikes with its tail against the surface of the water, making a report at each blow louder than the noise of a cannon."

There is still another and more powerful enemy called, by the fishermen of New England, the killer. This is itself supposed to be a cetaceous animal, armed with strong and powerful teeth. A number of these are said to surround the Whale, in the same

manner as dogs get round a bull. Some attack it with their teeth behind; others attempt it before: until, at last, the great animal is torn down, and its tongue is said to be the only part they devour when they have made it their prey. They are said to be of such great strength, that one of them alone was known to stop a dead Whale that several boats were towing along, and drag it from among them to the bottom.

But of all the enemies of these enormous fishes, man is the greatest: he alone destroys more in a year than the rest in an age, and actually has thinned their numbers in that part of the world where they are chiefly sought. At the first discovery of Greenland, Whales not being used to be disturbed, frequently came into the very bays, and were accordingly killed almost close to the shore; so that the blubber being cut off was immediately boiled into oil on the spot. The ships in those times took in nothing but the pure oil and the whalebone, and all the business was executed in the country; by which means a ship could bring home the product of many more Whales than she can according to the present method of conducting this trade. The fishery also was then so plentiful, that they were obliged sometimes to send other ships to fetch off the oil they had made, the quantity being more than the fishing ships could bring away. But time and change of circumstances have shifted the situation of this trade. The ships coming in such numbers from Holland, Denmark, Hamburgh, and other northern countries, all intruders upon the English, who were the first discoverers of Greenland, the Whales were disturbed, and gradually, as other fish often do, forsaking the place, were not to be killed so near the shore as

before; but are now found, and have been so ever since, in the openings and space among the ice, where they have deep water, and where they go sometimes a great many leagues from the shore.

The Whale fishery begins in May, and continues all June and July; but whether the ships have good or bad success, they must come away, and get clear of the ice, by the end of August; so that in the month of September at farthest they may be expected home; but a ship that meets with a fortunate and early fishery in May may return in June or July.

The manner of taking Whales at present is as follows.—Every ship is provided with six boats, to each of which belong six men for rowing the boat, and a harpooner, whose business it is to strike the Whale with his harpoon. Two of these boats are kept constantly on the watch at some distance from the ship, fastened to pieces of ice, and are relieved by others every four hours. As soon as a Whale is perceived, both the boats set out in pursuit of it, and if either of them can come up before the Whale finally descends, which is known by his throwing up his tail, the harpooner discharges his harpoon at him. There is no difficulty in choosing the place where the Whale is to be struck, as some have asserted; for these creatures only come up to the surface in order to spout up the water, or *blow*, as the fishermen term it, and therefore always keep the soft and vulnerable part of their bodies above water¹.

¹ A late improvement has been made in the method of discharging the harpoon; namely, by shooting it out of a kind of swivel or musquetoon: but it does not appear, that since this improvement was made, the Whale-fishing ships have had better success than before.

As soon as the Whale is struck, the men set up one of their oars in the middle of the boat as a signal to those in the ship. On perceiving this, the watchman alarms all the rest with the cry of *fall! fall!* upon which all the other boats are immediately sent out to the assistance of the first.

The Whale finding himself wounded runs off with prodigious violence. Sometimes he descends perpendicularly; at others goes off horizontally, at a small depth below the surface. The rope which is fastened to the harpoon is about two hundred fathoms long, and properly coiled up, that it may freely be given out as there is a demand for it. At first, the velocity with which this line runs over the side of the boat is so great, that it is wetted to prevent its taking fire: but in a short time the strength of the Whale begins to fail, and the fishermen, instead of letting out more rope, strive as much as possible to pull back what is given out already, though they always find themselves necessitated to yield at last to the efforts of the animal, to prevent his sinking their boat. If he runs out the two hundred fathoms of line contained in one boat, that belonging to another is immediately fastened to the end of the first, and so on; and there have been instances, where all the rope belonging to the six boats has been necessary, though half that quantity is seldom required. The Whale cannot stay long below water, but again comes up to blow; and being now much fatigued and wounded, stays longer above water than usual. This gives another boat time to come up with him, and he is again struck with a harpoon. He again descends, but with less force than before; and when he comes up again, is generally incapable of descending, but suffers himself to be wounded and

killed with long lances which the men are provided with for the purpose. He is known to be near death when he spouts up the water deeply tinged with blood.

The Whale, being dead, is lashed alongside the ship. They then lay it on one side, and put two ropes, one at the head, and the other in the place of the tail, which, together with the fins, is struck off as soon as he is taken, to keep these extremities above water. On the off side of the Whale are two boats, to receive the pieces of fat, utensils, and men, that might otherwise fall into the water on that side. These precautions being taken, three or four men with irons at their feet, to prevent slipping, get on the whale, and begin to cut out pieces of about three feet thick and eight long, which are hauled up at the capstan or windlass. When the fat is all got off, they cut off the whiskers of the upper jaw with an axe. Before they cut, they are all lashed to keep them firm; which also facilitates the cutting, and prevents them from falling into the sea: when on board, five or six of them are bundled together, and properly stowed; and after all is got off, the carcass is turned adrift, and devoured by the bears, who are very fond of it. In proportion as the large pieces of fat are cut off, the rest of the crew are employed in slicing them smaller, and picking out all the lean. When this is prepared, they stow it under the deck, where it lies till the fat of all the Whales is on board; then cutting it still smaller, they put it up in casks in the hold, cramming them very full and close. Nothing now remains but to sail homewards, where the fat is to be boiled and melted down into train oil.

It were in vain to speak in this place of the ad-

vantages that may be derived to Great Britain from the Whale fishery. We shall only remark, that the legislature, justly considering that trade as of great national importance, bestowed upon it at different periods very considerable encouragements. In particular, every British vessel of two hundred tons or upwards, bound to the Greenland seas on the Whale fishery, if found to be duly qualified according to the act, obtained a licence from the Commissioners of the customs to proceed on such voyage: and on the ship's return, the master and mate making oath that they proceeded on such voyage and no other, and used all their endeavours to take Whales, &c. and that all the Whale-fins, blubber, oil, &c. imported in their ship, were taken by their crew in those seas, there was allowed forty shillings for every ton according to the admeasurement of the ship.

It was afterwards found, however, that so great a bounty was neither necessary to the success of the trade, nor expedient with regard to the public. In 1786, therefore, the acts conferring the said emoluments being upon the point of expiring, the subject was brought under the consideration of Parliament; and it was proposed to continue the former measures, but with a reduction of the bounty from forty shillings to thirty shillings. In proposing this alteration, it was stated, "that the sums which this country had paid in bounties for the Greenland fishery amounted to one million two hundred and sixty-five thousand four hundred and sixty-one pounds; that, in the last year, we had paid ninety-four thousand eight hundred and fifty-eight pounds; and that, from the consequent deduction of the price of the fish, the public at present paid sixty per cent. upon every cargo. In the Greenland fishery there were

employed six thousand seamen, and these seamen cost government thirteen pounds ten shillings per man per annum, though we were never able to obtain more than five hundred of that number to serve on board our ships of war. Besides, the vast encouragement given to the trade had occasioned such a glut in the market, that it was found necessary to export considerable quantities; and thus we paid a large share of the purchase money for foreign nations, as well as for our own people, besides supplying them with the materials of several important manufactures." This proposition was opposed by several members, but was finally carried; and the propriety of the measure became very soon apparent. At that time (1786) the number of ships employed from England in the Whale fishery to Davis's Straits and the Greenland seas amounted to one hundred and thirty-nine, besides fifteen from Scotland. The proposed alteration took place the next year (1787); and notwithstanding the diminution of the bounty, the trade increased; the number of ships employed the same year from England amounting to two hundred and seventeen, and the next year (1788) to two hundred and twenty-two.

The flesh of this animal is a dainty to some nations; and the savages of Greenland, as well as those near the south pole, are fond of it to distraction. They eat the flesh, and drink the oil, which is a first-rate delicacy. The finding a dead Whale is an adventure considered among the fortunate circumstances of their wretched lives. They make their abode beside it; and seldom remove till they have left nothing but the bones.

a third part of its bulk, so in this species the head is so large as to make one half of the whole. Their throats are much wider than those of the common whale, as may be judged from the fact, that the remains of sharks more than twelve feet long have been found in their stomachs. The Cachalot is as destructive among the lesser fishes as the whale is harmless; and can at one gulp swallow a shoal of fishes down its enormous gullet. Linnæus tells us that this fish pursues and terrifies the dolphins and porpoises so much, as often to drive them on shore.

But, how formidable soever this fish may be to its fellows of the deep, it is by far the most valuable, and the most sought after by man, as it contains two very valuable drugs spermaceti and ambergris: the whole oil of this fish is very easily convertible into spermaceti. This is performed by boiling it with a lye of potash, and hardening it in the manner of soap. Candles are now made of it, which are substituted for wax, and sold much cheaper.

As to the ambergris which is sometimes found in this whale, it was long considered as a substance found floating on the surface of the sea; but time, that reveals the secrets of the mercenary, has discovered that it chiefly belongs to this animal. The name, which has been improperly given to the former substance, seems more justly to belong to this; for the ambergris is found in the place where the seminal vessels are usually situated in other animals. It is found in a bag of three or four feet long, in round lumps, from one to twenty pounds weight, floating in a fluid rather thinner than oil, and of a yellowish colour. There are never seen more than four at a time in one of these bags; and that which weighed twenty pounds, and which was the largest ever seen,

was found single. These balls of ambergris are not found in all fishes of this kind, but chiefly in the oldest and strongest.

The blunt-headed Cachalot is fifty-four feet in length. Its greatest circumference is just beyond the eyes, and is thirty feet. The upper jaw is five feet longer than the lower, which is ten feet. The head is above one third the size of the fish. The end of the upper jaw is blunt, and near nine feet high, the spout hole placed near the end of it. The teeth are placed in the lower jaw, twenty-three on each side, all pointing outwards, and in the upper jaw, opposite, are a number of holes to receive them when the mouth is closed ; they are about eighteen inches long.

The SMALL-EYED, or BLACK-HEADED, SPERMACETI WHALE is one of the most formidable monsters of the deep. It has an enormous, dark coloured head, armed with twenty-one projecting teeth on each side of the jaw. In a full grown specimen these teeth are nine inches in length. This Whale is often more than fifty feet in length, and is uncommonly active. Sharks, dolphins, and porpesses fall an easy prey to it.

THE GRAMPUS, THE DOLPHIN, AND THE PORPESSE.

ALL these fish have teeth both in the upper and lower jaw, and are much less than the whale. The Grampus, which is the largest, seldom exceeds twenty-four feet in length. It is a clumsy, unsightly fish, dark on the upper part, but very white below. The lower jaw is considerably wider than the upper. The back fin sometimes measures six feet. The

Grampus is an exceedingly voracious animal, which does not always spare even its own kind. Packs of them are said to attack the Greenland whale, like bull dogs, and tear off his flesh in masses. It, however, displays the utmost solicitude and affection for its young. Little oil is afforded by the Grampus. It floats deep in the water, and would seldom be caught did not its eagerness for prey prompt it to rush into shallow waters, where it is killed, but not till it has made a desperate and formidable resistance.

THE DOLPHIN.



THOUGH so often incorrectly painted as being of the shape of the letter S. the Dolphin is almost straight, the back being very slightly incurvated, and the body slender; the nose is long, narrow, and pointed, with a broad transverse band, or projection of the skin on its upper part. From the shape of the nose, the animal has been called the Sea-goose. The mouth is very wide, and has twenty-one teeth in the upper, and nineteen in the lower jaw, somewhat above an inch long, conic at the upper end, sharp pointed, and bending a little in. They are placed at a small distance from each other; so that when the mouth is shut, the teeth of both jaws lock into each other; the spout hole is placed in the middle of the head; the tail is semilunar; the skin is smooth;

the colour of the back and sides dusky ; the belly whitish ; it swims with great swiftness, and its prey is fish, but particularly cod, herrings, and flat fish. The Dolphin is longer and more slender than the porpesse, measuring nine or ten feet in length, and two in diameter.

All this species have fins on the back ; very large heads ; and resemble each other in their appetites, their manners, and conformation, being equally voracious, active, and roving. No fish could escape them, but from the awkward position of their mouth, which is placed in a manner under the head. Their own agility is so great as to prevent them from being often taken, and they seldom remain a moment above water ; their too eager pursuit after prey occasionally, however, exposes them to danger, as they will sometimes follow the object of their pursuit even into the nets of the fishermen.

A shoal of Dolphins will frequently attend the course of a ship for the scraps that are thrown over-board, or the barnacles adhering to their sides. A shoal of them followed the ships of Sir Richard Hawkins upwards of a thousand leagues. Their gambols and evolutions on the surface of the water are often very amusing. A Dolphin has been known to spring forward more than twenty feet at a single bound. They inhabit the European and Pacific ocean.

The flesh, though tolerably well tasted, is dry and insipid : the best parts are near the head. It is seldom eaten but when young and tender. Dolphins are said to change their colour before they die, and again after they are dead.

THE PORPESSE.



In its general form the Porpesse, or Porpus, very much resembles the dolphin. It is, however, somewhat less in size, and has a snout much broader and shorter. It is generally from six to seven feet in length; its body is thick towards the head, but grows slender towards the tail, forming the figure of a cone. In each jaw are forty-eight teeth, small, sharp-pointed, and moveable; and so placed that the teeth of one jaw lock into those of the other. The eyes are small, as is the spout-hole at the top of the head. In colours the back is black, and the belly whitish, but they sometimes vary.—Porpesses are very numerous in all the British seas, but more particularly in the river St. Lawrence, in America; where there is a white kind. They are seldom seen except in troops of six or seven to thirty and upwards, and, like the dolphin, they are very agile and sportive. In the most tempestuous weather they can surmount the waves, and pursue their course without injury. Seamen have a superstitious detestation of them, because they believe their appearance to be ominous of approaching storms.

These animals live chiefly on the smaller fish; at the season when mackerel, herrings, pilchards, and

salmon appear, the Porpesse swarms; and such is its violence in pursuit of its prey, that it will follow a shoal of small fish up a fresh water river, from whence it finds a difficulty to return. These creatures have been often taken in the river Thames, both above and below London Bridge; and it is curious to observe with what dexterity they avoid their pursuers, and how momentarily they recover their breath above the water. It is usual to spread four or five boats over the part of the river where they are seen, and to fire at them the instant they rise. One Porpesse yields about a hogshead of oil, and therefore renders its capture an object of consideration.

It is said that, whenever a Porpesse happens to be wounded, all the rest of its companions will immediately fall upon and devour it.

CHAP. VIII.

Of Cartilaginous Fishes...Of the SHARK...The White Shark...The Blue, the Long-tailed, the Basking, the Hammer-headed, and the Angel Shark...The Remora...The Pilot Fish...The Dog fish and its Varieties...The Sawfish...The RAY...The Skate...The Rough-ray...The Thornback...Manner of fishing for Flat Fish...The Sting Ray...The Torpedo...The Sea Devil...The Sea Eagle...The LAMPREY...The STURGEON...The Isinglass Fish...The ANGLER...The DIODON, or Sun Fish...The Oblong and Short Diodon...The SEA PORCUPINE...The LUMP-SUCKER...The Sea Snail...The PIPE-FISH...The HIPPOCAMPUS...The GALLEY FISH.

Cartilaginous Fishes.

THE first great distinction which the cartilaginous tribe of fishes exhibits is, in having cartilages or gristles instead of bones. The size of all fishes increases with age; but from the pliancy of the bones in this tribe, they seem to have no bounds placed to their dimensions: and it is supposed that they grow larger every day till they die.

Cartilaginous fishes unite the principal properties of both the other classes in their conformation: like the cetaceous tribes, they have organs of hearing, and lungs: like the spinous kinds, they have gills, and a heart without a partition.

From this structure of their gills, these animals are enabled to live a longer time out of water than other fishes. The cartilaginous shark, or ray, live some hours after they are taken; while the spinous herring or mackarel expire a few minutes after they are brought on shore. Some of this class bring forth their young alive; and some bring forth eggs, which are afterwards brought to maturity. In all,

however, the manner of gestation is nearly the same; for upon dissection, it is ever found, that the young, while in the body, continue in the egg till a very little time before they are excluded: these eggs they may properly be said to hatch within their body; and as soon as their young quit the shell, they begin to quit the womb also.

THE SHARK.

OF all the inhabitants of the deep those of the Shark kind are the fiercest and most voracious.

THE WHITE SHARK



Is sometimes seen to rank even among the whales for magnitude; and is found from twenty to thirty feet long. Some assert that they have seen them of four thousand pounds weight; and we are told particularly of one, that had a human corpse in his belly. The head is large, and somewhat flatted; the snout long, and the eyes large. The mouth is enormously wide, as is the throat, and capable of swallowing a man with great ease. But its furniture of teeth is still more terrible. Of these there are

six rows extremely hard, sharp pointed, and of a wedgelike figure. It is asserted that there are seventy-two in each jaw, which make one hundred and forty-four in the whole; yet others think that their number is uncertain; and that, in proportion as the animal grows older, these terrible instruments of destruction are found to increase. With these the jaws both above and below appear planted all over; but the animal has the power of erecting or depressing them at pleasure. When the Shark is at rest, they lie quite flat in his mouth; but when he prepares to seize his prey, he erects all this dreadful apparatus, by the help of a set of muscles that join them to the jaw; and the animal he seizes, dies pierced with a hundred wounds in a moment.

Nor is this fish less terrible to behold as to the rest of his form: his fins are larger, in proportion; he is furnished with great goggle eyes, which he turns with ease on every side, so as to see his prey behind him as well as before: and his whole aspect is marked with a character of malignity: his skin also is rough, hard, and prickly; being that substance which covers instrument cases, called shagreen.

No fish can swim so fast as the Shark; he outstrips the swiftest ships. Such amazing powers, with such great appetites for destruction, would quickly unpeople even the ocean, but providentially the Shark's upper jaw projects so far above the lower, that he is obliged to turn on one side (not on his back, as is generally supposed) to seize his prey. As this takes some small time to perform, the animal pursued seizes that opportunity to make his escape.

Still, however, the depredations he commits are

frequent and formidable. The Shark is the dread of sailors in all hot climates; where, like a greedy robber, he attends the ships, in expectation of what may drop overboard. A man who unfortunately falls into the sea at such a time is sure to perish. A sailor that was bathing in the Mediterranean, near Antibes, in the year 1744, while he was swimming about fifty yards from the ship, perceived a monstrous fish making towards him and surveying him on every side, as fish are often seen to look round a bait. The poor man, struck with terror at its approach, cried out to his companions in the vessel to take him on board. They accordingly threw him a rope with the utmost expedition, and were drawing him up by the ship's side, when the Shark darted after him from the deep, and snapped off his leg.

Mr. Pennant tells us, that the master of a Guinea ship, finding a rage for suicide prevail among his slaves, from a notion the unhappy creatures had, that after death they should be restored again to their families, friends, and country; to convince them at least that some disgrace must attend them here, he ordered one of their dead bodies to be tied by the heels to a rope, and so let down into the sea; and though it was drawn up again with great swiftness, yet, in that short space, the Shark had bitten off all but the feet. A Guinea captain was, by stress of weather, driven into the harbour of Belfast, with a lading of very sickly slaves, who, in the manner above-mentioned, took every opportunity to throw themselves overboard when brought upon deck, as is usual, for the benefit of the fresh air. The brutal captain perceiving, among others, a woman slave attempting to drown herself, pitched upon her as an

example to the rest. As he supposed that they did not know the terrors attending death, he ordered the woman to be tied with a rope under the armpits, and to let her down into the water. When the poor creature was thus plunged in, and about half way down, she was heard to give a terrible shriek, which at first was ascribed to her fears of drowning; but soon after, the water appearing red all round her, she was drawn up, and it was found that a Shark, which had followed the ship, had bit her off from the middle.

The usual method of our sailors to take the Shark is by baiting a great hook with a piece of beef or pork, which is thrown out into the sea by a strong cord, strengthened near the hook with an iron chain. Without this precaution, the Shark would quickly bite the cord in two, and thus set himself free. It is no unpleasant amusement to observe this voracious animal coming up to survey the bait, particularly when not pressed by hunger. He approaches it, examines it, swims round it, seems for a while to neglect it, perhaps apprehensive of the cord and chain: he quits it for a little; but, his appetite pressing, he returns again; appears preparing to devour it, but quits it once more. When the sailors have sufficiently diverted themselves with his different evolutions, they then make a pretence, by drawing the rope, as if intending to take the bait away; it is then that the glutton's hunger excites him; he darts at the bait, and swallows it, hook and all. Sometimes, however, he does not so entirely gorge the whole, but that he once more gets free; yet even then, though wounded and bleeding with the hook, he will again pursue the bait until he is taken. When he finds the hook lodged in his maw, his

utmost efforts are then excited, but in vain, to get free; he tries with his teeth to cut the chain; he pulls with all his force to break the line; he almost seems to turn his stomach inside out, to disgorge the hook: in this manner he continues his formidable though fruitless efforts; till, quite spent, he suffers his head to be drawn above water, and the sailors confining his tail by a noose, in this manner draw him on shipboard, and despatch him. This is done by beating him on the head till he dies: yet even that is not effected without difficulty and danger; the enormous creature, terrible even in the agonies of death, still struggles with his destroyers; nor is there an animal in the world that is harder to be killed. Even when cut in pieces, the muscles still preserve their motion, and vibrate for some minutes after being separated from the body. Another method of taking him is by striking a barbed instrument, called a fizgig, into his body, as he brushes along by the side of the ship. As soon as he is taken up, to prevent his flouncing, they cut off the tail with an axe, with the utmost expedition.

This is the manner in which Europeans destroy the Shark; but some of the negroes along the African coast take a bolder and more dangerous method to combat their terrible enemy. Armed with nothing more than a knife, the negro plunges into the water, where he sees the Shark watching for his prey, and boldly swims forward to meet him. Though the great animal does not come to provoke the combat, he does not avoid it, and suffers the man to approach him; but, just as he turns upon his side to seize the aggressor, the negro watches the opportunity, plunges his knife into the fish's belly, and pursues his blows with such success, that he lays the ravenous tyrant

dead at the bottom: he soon however returns, fixes the fish's head in a noose, and drags him to shore, where he makes a noble feast for the adjacent villages.

Nor is man alone the only enemy this fish has to fear: the REMORA, or Sucking-fish, is probably a



still greater, and follows the Shark every where. This fish has the power of adhering to whatever it sticks against, in the same manner as a cupping-glass sticks to the human body. It is by such an apparatus that this animal sticks to the Shark, drains away its moisture, and produces a gradual decay.

There are only three known species of the Sucking-fish; these are occasionally seen in the Mediterranean Sea and the Pacific Ocean. The common Sucking-fish, which inhabits most parts of the ocean, is usually about a foot in length; the head large, equal in bigness to the body, which grows smaller gradually to the tail.

The back is convex and black, and the belly white. It has six fins, two growing from behind the gills, two more under the throat, a long one on the back, and opposite to it, under the belly, another of the same form and size; the tail is wedge-shaped.

What this fish has peculiar to itself is, that the crown of the head is flat, and of an oval form, with a ridge, or rising, running lengthways; and crossways to this, sixteen ridges, with hollow furrows between, by which structure it can fix to any animal or other substance, as they are often found adhering to the

sides of ships, and the bodies of Sharks and other large fish. This adhesive quality gave rise to an absurd belief among the ancients, that the possessor of it had the power of arresting the progress of a ship in its fastest sailing. The Indians of Cuba and Jamaica formerly used to turn this quality to account by keeping tame Remoras, with which they fished. The Remora was secured by a slender but strong line, to which was attached a buoy, and was thrown into the water, upon which it would immediately pursue and fasten upon any fish that it perceived.

Sucking-fish are often eaten, and much admired: in taste they are said to resemble fried artichokes.

The Shark, however, appears to have one friend. This is the PILOT FISH. It has a long and banded



body, with four loose spines on the back; a compressed head, rounded off in front; a small mouth, the jaws of which are of equal length, and furnished with small teeth. The palate has a curved row of teeth, and the tongue has teeth all along.

This species is found in the Mediterranean, Southern Ocean, East Indies, and Cape of Good Hope. It grows to a foot and a half in length, and derives its name from being commonly seen with the Shark, to which it appears to point out its prey. The circumstance of its guiding the Shark was long a matter of doubt, but appears now to be an ascertained fact. M. Geoffroy, when near Malta, in 1798, saw two of

the Pilot Fish lead a Shark to a piece of bacon which a seaman had let down by a line and hook.

There are several other species of the Shark. The BLUE SHARK is distinguished by a fine smooth skin on its back, of a blue colour. The observation of *Ælian*, that the young of this animal when pursued will take refuge in the belly of its mother, by swimming down her mouth, is confirmed by one of the best of modern ichthyologists (*Rondeletius*). Mr. *Pennant*, however, does not apprehend this circumstance to be peculiar to the Blue Shark, but rather common to the whole genus.

The LONG-TAILED SHARK. The author whom we have just quoted mentions the dimensions of one of these animals which will serve to give an idea of the general proportions of this species. The fish in question was thirteen feet in length, of which the tail was more than six, the upper lobe much longer than the lower. The body was round and short; the nose short and pointed; the eyes large, and placed immediately over the corners of the mouth. This fish was anciently called the *Sea Fox*, from its supposed cunning.

The BASKING SHARK, which derives its name from its basking on the surface of the water, has nothing of the rapacious nature of these animals, but feeds entirely on sea plants, and some of the species of medusæ. They sometimes visit our coasts in the summer season, when they will lie in the sun on the surface of the water, and are so tame as to suffer themselves to be stroked. They are in length from three to twelve yards, and sometimes even larger. The liver is of such immense size as often to weigh nearly a thousand pounds. It contains a large quantity of oil.

The HAMMER-HEADED SHARK, or BALANCE FISH, is an animal of a very peculiar form. The head is placed transversely to the body, like the head of a hammer or mallet. It is terminated at each end by an eye, which is so placed that it more conveniently looks downward than either upward or sideways. In the farther part of the forehead near the eyes on each side there is a large oblong foramen or orifice, serving either for hearing or smelling, or perhaps for both. The mouth is very large, placed under the head, and armed with four rows of teeth extremely sharp. The tail consists of two fins, one longer than the other. The back is ash colour, and the belly white. This fish is chiefly caught in the Mediterranean.

The ANGEL SHARK, or MONK FISH, is the animal which connects the Shark genus with that of the ray, and partakes in some degree of the nature of both. It grows to a very large size, sometimes a hundred weight. The head is large; the teeth broad at the base, slender and sharp at the point. Like those of other Sharks, they are capable of being raised or depressed at the pleasure of the animal. The eyes are oblong, and placed lengthways in the head. They are sunk very deep, and almost covered with the skin; and have more the expression of malevolence than of fire or spirit.

The skin is very rough; the back is of a pale ash colour, with a line of large lumps with pointed prickles along it. The pectoral fins are extremely large, and resemble wings, whence probably it derives the name of Angel. This species of Shark feeds on flounders and flat fish. It is extremely fierce and dangerous to be approached. Mr. Pennant speaks of a fisherman whose leg was terribly

torn by one of them as it lay in his net in shallow water. It is not unfrequent on all our coasts.

In this genus are included the several species of **DOG-FISH**, which are common in most parts of the world, and retain much of the form and all the habits of the Shark. Nay, their appetite for human flesh is said to be so great, that they will sometimes even venture upon the shore to gratify this violent propensity. The most remarkable are the **TOPE**, which weighs sometimes seventy pounds; the **SPOTTED DOG-FISH**; the **PICKED DOG-FISH**, which has spines on its back fins; the **SMOOTH HOUND**, which is without the spines; and the **PORBEAGLE**.

Authors have classed under this genus a singular fish which is well known in the Western Ocean under the name of the **SAW-FISH**. It is remarkable for a curious instrument with which it is furnished at the snout resembling a saw, and which is sometimes of the length of five feet. From this circumstance it is evident that it must grow to a very large size.

THE RAY.

THE whole of this genus resemble each other very strongly in their figure; nor is it easy without experience to distinguish one from another. The stranger to this dangerous tribe may imagine he is only handling a skate when he is instantly struck numb by the torpedo; and he may suppose he has caught a thornback till he is stung by the fire-flare. It is by the spines that these animals are distinguished from each other.

THE SKATE.



THIS fish is the largest and best of its tribe; the flesh being white, firm, and well flavoured. It sometimes attains an immense size. It has a broad flat body, brown on the back, and white on the belly. The principal difference between it and the thornback consists in its having sharp teeth, and a single row of spines on the tail, whilst the latter has blunt teeth, and several rows of spines both on the back and tail. The females produce their offspring from May till September. Each of the young ones is enclosed in an angular oblong bag, of a maroon colour; a substance like thin parchment or leather, and having two horns at each end. These, which are sometimes cast ashore after storms, are called purses by the fishermen.

The SHARP-NOSED RAY has ten spines, that are situated towards the middle of the back. The ROUGH RAY has its spines spread indiscriminately over the whole back. The THORNBACk has its spines disposed in three rows upon the back. The STING RAY, or FIRE-FLARE, has but one spine, but indeed a terrible one. This dangerous weapon is placed on the tail, about four inches from the body, and is

not less than five inches long. It is of a flinty hardness, the sides thin, sharp-pointed, and closely and sharply bearded the whole way. The *TURPEDO* has no spines that can wound ; but in the place of them it is possessed of one of the most potent and extraordinary faculties in nature.

Of all the larger fish of the sea, these are the most numerous ; and they owe their numbers to their size. Except the white shark and cachalot alone, there is no other fish that has a swallow large enough to take them in ; and their spines make them a still more dangerous morsel. Yet the size of some is such, that even the shark himself is unable to devour them : we have seen some of them in England weigh above two hundred pounds ; but that is nothing to their enormous bulk in other parts of the world. Labat tells us of a prodigious Ray that was speared by the negroes at Guadaloupe, which was thirteen feet eight inches broad, and about ten feet from the snout to the insertion of the tail. The tail itself was in proportion, for it was no less than fifteen feet long ; twenty inches broad at its insertion, and tapering to a point. The body was two feet in depth ; the skin as thick as leather, and marked with spots, which spots in all of this kind are only glands, that supply a mucus to lubricate and soften the skin. This enormous fish was utterly unfit to be eaten by the Europeans ; but the negroes chose out some of the nicest bits, and carefully salted them up as a most favourite provision.

It is chiefly during the winter season that our fishermen fish for the Ray ; but the Dutch, who are indefatigable, begin their operations earlier, and fish with better success than we do. The method practised by the fishermen of Scarborough is thought to

be the best among the English; and, as Mr. Pennant has given a very succinct account of it, we shall present it to the reader.

“When they go out to fish, each person is provided with three lines: each man’s lines are fairly coiled upon a flat oblong piece of wicker work; the hooks being baited and placed very regularly in the centre of the coil. Each line is furnished with two hundred and eighty hooks, at the distance of six feet two inches from each other. The hooks are fastened to lines of twisted horse-hair, twenty seven inches in length. The line is laid across the current, and always remains upon the ground about six hours.

“The best bait for all kinds of fish is fresh herring cut in pieces of a proper size. Next to herrings are the lesser lampreys, which come all winter by land carriage from Tadcaster. The next baits in esteem are small haddocks cut in pieces, sandworms, muscles, and limpets; and, lastly, when none of these can be found, they use bullock’s liver. The hooks used there are much smaller than those employed at Iceland and Newfoundland; and are two inches and a half long in the shank. The line is made of small cording; it is always tanned before it is used, and is in length about three miles.”

But this extent of line is nothing to what the Italians throw out in the Mediterranean. Their fishing is carried on in a tartan, which is a vessel much larger than ours; and they bait a line of no less than twenty miles long, with above ten or twelve thousand hooks. This line is not regularly drawn every six hours, as with us, but remains for some time in the sea; and it requires the space of twenty-four hours to take it up. By this apparatus they take Rays, sharks, and other fish; some of which

are above a thousand pounds weight. When they have caught any of this magnitude, they strike them through with a harpoon, to bring them on board, and kill them as fast as they can.

This method of catching fish is obviously fatiguing and dangerous; but the value of the capture generally repays the pains. The skate and the thornback are very good food; and their size, which is from ten pounds to two hundred weight, very well rewards the trouble of fishing for them. But it sometimes happens that the lines are visited by very unwelcome intruders; by the Rough Ray, the Fire-flare, or the Torpedo.

The Rough Ray inflicts but slight wounds with the prickles with which its whole body is furnished. To the ignorant it seems harmless, and a man would at first sight venture to take it in his hand, without any apprehension; but he soon finds, that there is not a single part of its body that is not armed with spines: and that there is no way of seizing the animal but by the little fin at the end of the tail.

But this animal is harmless, when compared to the Sting Ray, or Fire-flare, which seems to be the dread of even the boldest and most experienced fishermen. The spine, with which it wounds its adversaries, is not venomous, as has been vulgarly supposed, but is, in fact, a weapon of offence belonging to this animal, and capable, from its barbs, of inflicting a very terrible wound, attended with dangerous symptoms; it is fixed to the tail, as a quill is into the tail of a fowl, and is annually shed in the same manner.

THE TORPEDO



Is, however, the most remarkable of the Ray kind. The body of this fish is almost circular, and thicker than others of the same genus; the skin is soft, smooth, and of a dusky brown above, and white underneath; the eyes very small; the tail tapering to a point; and the weight of the fish from a quarter to fifteen pounds. Redi found one twenty-four pounds weight. The Electrical Rays are found in many parts of the European seas. The fishermen often discover it in Torbay, and sometimes of eighty pounds weight. They are partial to sandy bottoms, in about forty fathoms water, where they often bury themselves by flinging the sand over them, by a quick flapping of all the extremities. They bring forth their young in autumn. To all outward appearance, the Torpedo is furnished with no extraordinary qualities; yet such is the unaccountable power it possesses, that, the instant it is touched, it numbs not only the hand and arm, but sometimes also the whole body. The shock received resembles the stroke of an electrical machine; sudden, tingling, and painful. It is, in truth, electric. "The instant," says Kempfer, "I touched it with my hand, I felt a

terrible numbness in my arm, and as far up as the shoulder. Even if one treads upon it with the shoe on, it affects not only the leg, but the whole thigh upwards. Those who touch it with the foot, are seized with a stronger palpitation than even those who touch it with the hand. This numbness bears no resemblance to that which we feel when a nerve is a long time pressed and the foot is said to be asleep; it rather appears like a sudden vapour, which, passing through the pores, in an instant penetrates to the very springs of life, whence it diffuses itself over the whole body, and gives real pain. The nerves are so affected, that the person struck imagines all the bones of his body, and particularly those of the limb that received the blow, are driven out of joint. All this is accompanied with a universal tremor, a sickness of the stomach, a general convulsion, and a total suspension of the faculties of the mind."

Reaumur, who made several trials upon this animal, has convinced the world that it is not necessarily, but by an effort, that the Torpedo numbs the hand of him that touches it. He tried several times, and could easily tell when the fish intended the stroke, and when it was about to continue harmless. Always before the fish intended the stroke, it flattened the back, raised the head and the tail; and then, by a violent contraction in the opposite direction, struck with its back against the pressing finger; and the body, which before was flat, became humped and round.

The electric or benumbing organs are placed one on each side of the gills, reaching from thence to the semicircular cartilages of each great fin, and extending longitudinally from the interior extremity

of the animal to the transverse cartilage which divides the thorax from the abdomen, and within these limits they occupy the whole space between the skin of the upper and under surfaces. Each organ is about five inches in length, and at the anterior end, about three in breadth; they are composed of perpendicular columns, reaching from the upper to the under surface, varying in length according to the thickness of the parts of the body, from an inch and a half to half an inch. The engraving displays the interior of the lower electric or galvanic organ.

When the fish is dead, the whole power is destroyed, and it may be handled or eaten with perfect security. It is now known that there are more fish than this of the Ray kind possessed of the numbing quality, which has acquired them the name of the Torpedo.

There are two other species of Ray, which for their singular form deserve to be distinguished. The first is called the SEA DEVIL. Its nose and snout are divided, as it were, into two horns; and its sides are terminated by the fins. Its skin, towards the head, is variegated with dusky spots. It grows, sometimes, to the length of six or seven feet.

The SEA EAGLE is another species of this deformed tribe. It receives its name from its thin and expanded sides, which resemble the spread wings of an eagle. Its head, in some degree, resembles that of a toad; its eyes are large and prominent. It is generally found small, but is said sometimes to grow to a very large size.

THE LAMPREY.

THERE is a species of the Lamprey served up as a great delicacy among the modern Romans very different from ours. Whether theirs be the murena of the ancients we shall not pretend to say; but there is nothing more certain than that our Lamprey is not.

The Lamprey known among us is differently estimated, according to the season in which it is caught, or the place where it has been fed. Those that leave the sea to deposit their spawn in fresh waters are the best; those that are entirely bred in our rivers, and that have never been at sea, are considered as much inferior to the former. Those that are taken in the months of March, April, or May, just upon their leaving the sea, are reckoned very good; those that are caught after they have cast their spawn, are found to be flabby, and of little value.

The Lamprey much resembles the eel in its general appearance, but is of a lighter colour, and rather a clumsier make. It differs, however, in the mouth, which is round, and placed rather obliquely below the end of the nose. It more resembles the mouth of a leech than an eel; and the animal has a hole on the top of the head, through which it spouts water, as in the cetaceous kind. There are seven holes on each side for respiration; and the fins are formed rather by a lengthening out of the skin, than any set of bones or spines for that purpose. As the mouth is formed resembling that of a leech, so it has a property resembling that animal, of sticking close to, and sucking any body it is applied to. It is extraordinary the power they have of adhering to

stones ; which they do so firmly, as not to be drawn off without some difficulty. We are told of one that weighed but three pounds ; and yet it stuck so firmly to a stone of twelve pounds, that it remained suspended at its mouth ; from which it was separated with no small difficulty. As to the intestines of the Lamprey, it seems to have but one great bowel, running from the mouth to the vent, narrow at both ends, and wide in the middle.

So simple a conformation seems to imply an equal simplicity of appetite. In fact, the Lamprey's food is either slime and water, or such small water-insects as are scarcely perceivable. Perhaps its appetite may be more active at sea, of which it is properly a native ; but when it comes up into our rivers, it is hardly perceived to devour any thing.

Its usual time of leaving the sea, which it is annually seen to do in order to spawn, is about the beginning of spring ; and after a stay of a few months it returns again to the sea. Their preparation for spawning is peculiar ; their manner is to make holes in the gravelly bottoms of rivers ; and on this occasion their sucking power is particularly serviceable ; for if they meet with a stone of a considerable size, they will remove it, and throw it out. Their young are produced from eggs, in the manner of flat fish ; the female remains near the place where they are excluded, and continues with them till they come forth. She is sometimes seen with her whole family playing about her ; and after some time she conducts them in triumph back to the ocean.

There is a small species of the Lamprey, which is called the LAMPERN, and about Oxford the PRIDE OF THE ISIS. It is frequently potted by itself, and sometimes along with the larger species.

but the instant it is raised with its head above water, all its activity ceases; it is then a lifeless, spiritless lump, and suffers itself to be tamely dragged on shore.

The flesh of this animal pickled is very well known at all the tables of Europe; and is even more prized in England than in any of the countries where it is usually caught. The fishermen have two different methods of preparing it. The one is by cutting it in long pieces lengthwise, and having salted them, by hanging them up in the sun to dry: the fish thus prepared is sold in all the countries of the Levant, and supplies the want of better provision. The other method, which is usually practised in Holland, and along the shores of the Baltic, is to cut the Sturgeon crosswise into short pieces, and put it into small barrels, with a pickle made of salt and saumure. This is the Sturgeon which is sold in England, and of which great quantities come from the North.

A very great trade is also carried on with the roe of the Sturgeon, preserved in a particular manner, and called caviar: it is made from the roe of all kinds of Sturgeon, but particularly the second. This is much more in request in other countries of Europe than with us. To all these high relished meats, the appetite must be formed by degrees; and though formerly even in England it was very much in request at the politest tables, it is at present sunk entirely into disuse. It is still, however, a considerable merchandise among the Turks, Greeks, and Venetians. Caviar somewhat resembles soft soap in consistence; but it is of a brown, uniform colour, and is eaten as cheese with bread.

THE HUSO, OR ISINGLASS FISH,

FURNISHES a still more valuable commodity. This fish is caught in great quantities in the Danube, from the months of October to January: it is seldom under fifty pounds weight, and often above four hundred; its flesh is soft, glutinous, and flabby; but it is sometimes salted, which makes it better tasted, and then it turns red like salmon. It is for the commodity it furnishes that it is chiefly taken. The manner of making it is this: they take the skin, the entrails, the fins, and the tail of this fish, and cut them into small pieces; these are left to macerate in a sufficient quantity of warm water, and they are all boiled shortly after with a slow fire, until they are dissolved and reduced to a jelly: this jelly is spread upon instruments made for the purpose, so that drying, it assumes the form of parchment, and, when quite dry, it is then rolled into the form which we see it in the shops. This valuable commodity is principally furnished from Russia, where they prepare great quantities surprisingly cheap.

THE SPOTTED TOAD FISH, ANGLER, OR
FISHING FROG,

IN shape very much resembles a tadpole, or young frog, but of an enormous size, for it grows to above five feet long, and its mouth is sometimes a yard wide. The eyes are placed on the top of the head, and are encompassed with prickles; immediately above the nose are two long beards or filaments, small in the beginning, but thicker at the end, and

round; these, as it is said, answer a very singular purpose; for being made somewhat resembling a fishing-line, it is asserted, that the animal converts



them to the purpose of fishing. With these extended, the Fishing Frog is said to hide in muddy waters, and leave nothing but the beards to be seen; the curiosity of the smaller fish brings them to view these filaments, and their hunger induces them to seize the bait; upon which the animal in ambush instantly draws in its filaments with the little fish that had taken the bait, and devours it without mercy. This story, though apparently improbable, has found credit among some of our best naturalists. The fishermen have, in general, a great regard for this ugly fish, as it is an enemy to the dog fish, the bodies of those fierce and voracious animals being often found in its stomach: whenever they take it, therefore, they always set it at liberty. It is found in Brazil and China; and generally keeps at the bottom of the water, among seaweed or between stones.

THE DIODON, OR SUN FISH,

Is easily distinguished by its very peculiar form; having a very deep body, and, as it were, cut off in the middle. There are three well known species.

The **OBLONG DIODON** grows to an immense size, and has been known to weigh upwards of five hundred pounds. In its form it resembles a bream or carp cut off in the middle. The mouth is very small, and contains in each jaw two broad teeth, with sharp edges. The dorsal and the anal fins are placed at the extremity of the body; the tail fin is narrow, and fills up all the space between these two fins. When boiled, it is observed to turn entirely to a glutinous jelly, and would probably serve all the purposes of isinglass; but it is not found in sufficient plenty, at least upon our coasts.

The **SHORT DIODON** differs from the preceding, in being much shorter and deeper, resembling the head of a fish rather than a perfect animal; both kinds are found on the western coasts of Britain, but in greater plenty in the warmer climates of Europe.

THE SEA PORCUPINE.

LIKE the porcupine, whence it takes its name, it is covered over with long thorns or prickles, which point on every side; and when the animal is enraged, it can blow up its body as round as a bladder, by means of a sort of air bag in its interior. It varies in dimensions from the size of a football to that of a bushel. The back is of a bluish colour, the sides and belly are white, and the body is covered with light and dark brown spots. Of this extra-

ordinary creature there are many species: some threatening only with spines, and others defended with a bony helmet that covers the head.

This species is found not only in America, but in



the Red Sea, and on the Japanese shores. At New York, where it appears only in the summer months, it is called the Goad Fish, and the natives catch them merely for amusement. They throw in a line baited with the tail of a sea crab; the fish approaches, but being afraid of the line, he makes several turns and trials round the bait, and at length nibbles at it, but pretends to reject it, and passes by, striking it with his tail, as if he did not regard it. But if the rod be kept steady, he presently turns back, seizes the bait, and swallows hook and all. When he finds himself taken, he becomes enraged, bristles up his spines, swells out his belly, and endeavours to wound every thing that is near him. Finding this of no avail, he resorts to cunning, and seems to submit: he lowers his spines, contracts his body, and lies like a wet glove. But this artifice not succeeding, and perceiving the fisherman dragging him towards the land, he renews his defensive attitude with redoubled fury. His spines are now vigorously erected, his form rounded, and his body so completely armed at all points, that it is impossible

to take it by the hand ; he is therefore dragged to some distance, where he struggles and quickly dies. Much cannot be said in favour of an amusement which is pursued for the sole purpose of contemplating the dying struggles of an unoffending creature.

THE LUMP FISH, LUMPSUCKER, OR
SEA OWL,



Is sixteen inches in length, and its weight about four pounds; the shape of the body is like that of the bream, deep, and it swims edgeways, the back is sharp and elevated, and the belly flat; the lips, mouth, and tongue of this animal are of a deep red; the whole skin is rough, with bony knobs, the largest row is along the ridge of the back; the belly is of a bright crimson colour; but what makes the chief singularity in this fish is an oval aperture in the belly, surrounded with a fleshy, soft substance, that seems bearded all round; by means of this part it adheres with vast force to any thing it pleases. If flung into a pail of water, it will stick so close to the bottom, that on taking the fish by the tail, one may lift up pail and all, though it hold several gallons of water. Great numbers of these fish are found along the coasts of Greenland in the beginning of

CHAP. VIII.

Of Bony Fishes in general...Apodal Fishes...The EEL...The Conger ...The Netted Eel...The Cordated Eel...The Electrical Eel...The LAUNCE...The WOLF FISH...The SWORD FISH...Jugular Fishes...The DRAGONET...The WEEVER...The COD...Three and five bearded Cods...The Haddock...The Whiting Pout...The Bib...The Poor...The Coal Fish...The Pollock...The Whiting...The Hake...The Ling...The Burbot...The BLENNY...The Crested and Viviparous Blenny...The Butterfly Fish...The Star-gazer...Thoracic Fishes...The GOBY, or Rock Fish...The Remora, or Sucking Fish...The BULLHEAD...The Miller's Thumb...The Pogge...The Flying SCORPÆA...The DOREE...The Opah...The FLOUNDER...The Halibut...The Plaise...The Dab...The Turbot...The Sole...The Lantern Fish...The Pearl...The Whiff...The GILTHEAD...The Streaked Gilthead...The Dorado...The WRASSE...The Ballan, &c. ...The PERCH...The Basse...The Ruffe...The Lanceolated HOLOCENTER...The STICKLEBACK...The MACKEREL...The Tunny...The Scud...The SURMULLET...The GURNARD...The Bow-banded CETODON...The Beaked Chetodon...The PARROT FISH...Abdominal Fishes...The LOACH...The Four-eyed Loach...The SALMON...The Sea Trout...The White Trout...The Samlet...The Trout...The Gillaroo, or Gizzard Trout...The Char...The Grayling...The Smelt...The Gwiniad...The PIKE...The Sea Needle...The Saury...The ARGENTINE...The ATHERINE...The MULLET...The FLYING FISH...The HERRING...The Pilchard...The Herring Fishery...The Sprat...The Anchovy...The Shad...The CARP...The Barbel...The Tench...The Gudgeon...The Bream...The Rud...The Crucian...The Roach...The Dace...The Chub...The BLEAK...The White Bait...The MINNOW...The Gold and Silver Fishes...The Telescope Carp...The Horned SILURUS...The TRUMPET FISH...The TOBACCO-PIPE FISH...The SEA COCK...The Art of Angling...Baits, &c. for Fishes...Praise of Angling.

Bony Fishes.

THE third general division of fishes is into that of the Spinous, or Bony Kind. These are obviously distinguished from the rest, by having a complete bony covering to their gills; by their being furnished

with no other method of breathing but gills only ; by their bones, which are sharp and thorny ; and their tails, which are placed in a situation perpendicular to the body.

The history of any one of this order very much resembles that of all the rest. They breathe air and water through the gills ; they live by rapine, each devouring such animals as its mouth is capable of admitting ; and they propagate, not by bringing forth their young alive, as in the cetaceous tribes, nor by distinct eggs, as in the generality of the cartilaginous tribes, but by spawn, or peas, as they are generally called, which they produce by hundreds of thousands.

The bones of this order of fishes, when examined but slightly, appear to be entirely solid ; yet, when viewed more closely, every bone will be found hollow, and filled with a substance less rancid and oily than marrow. These bones are very numerous, and pointed ; and, as in quadrupeds, are the props or stays to which the muscles are fixed, which move the different parts of the body.

The number of bones in all spinous fishes of the same kind is always the same. It is a vulgar way of speaking, to say, that fishes are, at some seasons, more bony than at others ; but this scarce requires contradiction. It is true, indeed, that fish are at some seasons much fatter than at others ; so that the quantity of the flesh being diminished, and that of the bones remaining the same, they appear to increase in number, as they actually bear a greater proportion.

As the spinous fishes partake less of the quadruped in their formation than any others, so they can bear to live out of their own element a shorter time.

Some, indeed, are more vivacious in air than others; the eel will live several hours out of water; and the carp has been known to be fattened in a damp cellar. The method is, by placing it in a net well wrapped up in wet moss, the mouth only out, and then hung up in a vault. The fish is fed with white bread and milk, and the net now and then plunged into the water.

It is impossible to account for the different operations of the same element upon animals that to appearance have the same conformation. To some fishes, bred in the sea, fresh water is immediate destruction; on the other hand, some fishes, that live in our lakes and ponds, cannot bear the salt water. This circumstance may possibly arise from the superior weight of the sea water. As, from the great quantity of salt dissolved in its composition, it is much heavier than fresh water, so it is probable it lies with greater force upon the organs of respiration, and gives them their proper and necessary play: on the other hand, those fish which are used only to fresh water, cannot bear the weight of the saline fluid, and expire in a manner suffocated in the grossness of the strange element. There are some tribes, however, that spend a part of their season in one, and a part in the other. Thus the salmon, the shad, the smelt, and the flounder, annually quit the ocean, and come up our rivers to deposit their spawn. This seems the most important business of their lives; and there is no danger which they will not encounter, even to the surmounting precipices, to find a proper place for the deposition of their future offspring. The salmon, upon these occasions, is seen to ascend rivers five hundred miles from the sea, and to brave, not only the dangers of

various enemies, but also to spring up cataracts. As soon as they come to the bottom of the torrent, they seem disappointed to meet the obstruction, and swim some paces back; they then take a view of the danger that lies before them, survey it motionless for some minutes, advance, and again retreat; till at last, summoning up all their force, they take a leap from the bottom, their body straight, and strongly in motion; and thus most frequently clear every obstruction. It sometimes happens, however, that they want strength to make the leap; and then, in our fisheries, they are taken in their descent.

But the length of the voyage performed by these fishes is sport, if compared to what is annually undertaken by some tribes that constantly reside in the ocean. Of this kind are the cod, the haddock, the whiting, the mackerel, the tunny, the herring, and the pilchard.

The power of increasing in these animals exceeds our idea, as it would, in a very short time, outstrip all calculation: and a single herring, if suffered to multiply unmolested and undiminished for twenty years, would show a progeny greater in bulk than ten such globes as that we live upon. Although the usual way with spinous fishes is to produce by spawn, yet there are some, such as the eel and the blenny, that are known to bring forth their young alive.

With respect to the growth of fishes, it is observed, that among carps particularly, the first year they grow to about the size of the leaf of a willow tree; at two years, they are about four inches long. They grow but one inch more the third season, which is five inches. Those of four years old are about six

inches; and seven after the fifth. From that to eight years old they are found to be larger in proportion to the goodness of the pond, from eight to twelve inches. With regard to sea-fish, the fishermen assure us, that a fish must be six years old before it is fit to be served up to table. They instance it in the growth of a mackerel. They assure us that those of a year old are as large as one's finger; and those of two years, are about twice that length; at three and four years, they are that small kind of mackerel that have neither milts nor roes; and between five and six, they are those full grown fish that are served up to our tables. In the same manner, with regard to flat fishes, they tell us that the turbot and plaice at one year are about the size of a crown piece; the second year as large as the palm of one's hand; and, at the fifth and sixth year, they are large enough to be served up to table. Thus, it appears, that fishes are a considerable time in coming to their full growth, and that they are a long time the prey of others before it comes to their turn to be destroyers¹.

The greediness with which sea fish devour the bait is prodigious, if compared with the manner they take it in fresh water. The lines of such fishermen as go off to sea, are coarse, thick, and clumsy, compared to what are used by those who fish at land. Their baits are seldom more than a piece of fish, or the flesh of some quadruped, stuck on the hook in a bungling manner; and scarce any art is employed to conceal the deception. But it is otherwise in fresh water; the lines must often be drawn to a hairlike fineness; they must be tintured of the pe-

¹ *Traité des Pêches*, par Monsieur Duhamel. Sec. iii. p. 100.

culiar colour of the stream ; the bait must be formed with the nicest art, and even, if possible, to exceed the perfection of nature : yet still the fishes approach it with diffidence, and often swim round it with disdain. The cod, on the banks of Newfoundland, the instant the hook, which is only baited with the guts of the animal last taken, is dropped into the water, darts to it at once, and the fishermen have but to pull up as fast as they throw down. But it is otherwise with those who fish in fresh waters, they must wait whole hours in fruitless expectation ; and the *patience of a fisherman* is proverbial among us.

As fish are enemies to one another, so each species is infested with worms of different kinds, peculiar to itself. The great fishes abound with them ; and the little ones are not entirely free. These troublesome vermin lodge themselves either in the jaws, and the intestines internally, or near the fins without. When fish are healthy and fat, they are not much annoyed by them ; but in winter, when they are lean or sickly, they then suffer very much.

Nor does the reputed longevity of this class secure them from their peculiar disorders. They are not only affected by too much cold, but there are frequently certain dispositions of the element in which they reside, unfavourable to their health and propagation. Some ponds they will not breed in, however artfully disposed for supplying them with fresh recruits of water, as well as provision. In some seasons also they are found to feel epidemic disorders, and are seen dead by the water side, without any apparent cause.

The fact of some fishes in warm climates being poisonous when eaten, cannot be doubted. We have a paper in the Philosophical Transactions,

giving an account of the poisonous qualities of those found at New Providence, one of the Bahama islands. The author there assures us, that the greatest part of the fish of that dreary coast are all of a deadly nature; their smallest effects being to bring on a terrible pain in the joints, which, if terminating favourably, leaves the patient without any appetite for several days after. It is not those of the most deformed figure, or the most frightful to look at, that are alone to be dreaded; all kinds, at different times, are alike dangerous; and the same species which has this day served for nourishment, is the next, if tried, found to be fatal.

As this order of fishes is extremely numerous, various modes of classing them have been invented by different naturalists. The simplest is that of Linnæus, who ranks them in four divisions, according to the position of the fins.

The first division is what that celebrated naturalist terms *Apodal*. This includes the most imperfect of the order, viz, *those which want the ventral or belly fins* (as the wolf fish), and consists of the following genera.

THE EEL

Is the first genus of this division, and includes several species.

The *COMMON EEL* is a very singular fish in several things that relates to its natural history, and in some respects borders on the nature of the reptile tribe.

It is known to quit its element, and, during night, to wander along the meadows, not only for change of habitation, but also for the sake of prey, feeding on the snails it finds in its passage.

During winter, it beds itself deep in the mud, and continues in a state of rest like the serpent kind. It is very impatient of cold, and will eagerly take shelter



in a wisp of straw flung into a pond in severe weather, which has sometimes been practised as a method of taking them. Albertus goes so far as to say, that he has known Eels to shelter in a hayrick, yet all perished through excess of cold.

It has been observed, that in the river Nen there is a variety of small Eel, with a lesser head and narrower mouth than the common kind; that it is found in clusters in the bottom of the river, and is called the Bed Eel; these are sometimes roused up by violent floods, and are never found at that time with meat in their stomachs. This bears such an analogy with the clustering of blind worms in their quiescent state, that we cannot but consider it as a further proof of partial agreement in the nature of the two genera.

The ancients adopted a most wild opinion about the generation of these fish, believing them to be either created from the mud, or that the scrapings of their bodies which they left on the stones, were animated, and became young Eels. Some moderns gave into these opinions, and into others that were equally extravagant. They could not account for

the appearance of these fish in ponds that were never stocked with them, and were even so remote as to make their being met in such places a phenomenon that they could not solve. But there is much reason to believe, that many waters are supplied with these fish by the aquatic fowl of prey, in the same manner as vegetation is spread by many of the land birds, either by being dropped as they carry them to feed their young, or by passing quick through their bodies, as is the case with herons; and such may be the occasion of the appearance of these fish in places where they were never seen before. Or in some of the nocturnal wanderings, already mentioned, Eels may have strayed into those new places of abode. As to their immediate generation, it has been sufficiently proved to be effected in the ordinary course of nature, and that they are viviparous.

They are extremely voracious, and very destructive to the fry of fish.

No fish lives so long out of water as the Eel; it is extremely tenacious of life, and its parts will move a considerable time after they are flayed and cut in pieces.

The Eel is placed by Linnæus in the genus of *murena*, his first of the apodal fish, or those which want the ventral fins.

The eyes are placed not remote from the end of the nose: the irides are tinged with red: the under jaw is longer than the upper; the teeth are small, sharp, and numerous; beneath each eye is a minute orifice; at the end of the nose two others, small and tubular. This fish is furnished with a pair of pectoral fins, rounded at their ends. Another narrow fin on the back, uniting with that of the tail; and the anal fin joins it in the same manner beneath.

Behind the pectoral fins is the orifice to the gills, which are concealed in the skin.

Eels vary much in their colours, from a sooty hue to a light olive green ; and those which are called Silver Eels have their bellies white, and a remarkable clearness throughout.

Besides these, there is another variety of this fish, known in the Thames by the name of Grigs, and about Oxford by that of Grigs or Gluts. These are scarce ever seen near Oxford in the winter, but appear in spring, and bite readily at the bait, which common Eels in that neighbourhood will not. They have a larger head, a blunter nose, thicker skin, and less fat, than the common sort ; neither are they so much esteemed, nor do they often exceed three or four pounds in weight.

Common Eels grow to a large size, sometimes so great as to weigh fifteen or twenty pounds, but that is extremely rare. As to instances brought by Dale and others, of these fish increasing to a superior magnitude, we have much reason to suspect them to have been congers, since the enormous fish they describe have all been taken at the mouth of the Thames or Medway.

The Eel is the most universal of fish, yet is scarce ever found in the Danube, though it is very common in the lakes and rivers of Upper Austria.

The Romans held this fish very cheap, probably from its likeness to a snake.

" For you is kept a sink-fed snakelike eel."

JUVENAL, Sat. v.

On the contrary, the luxurious Sybarites were so fond of these fish, as to exempt from every kind of tribute the persons who sold them.

The CONGER EEL grows to an immense size, and its fierceness is equal to its magnitude; they have been taken ten feet and a half long, and eighteen inches in circumference in the thickest part. They differ from the common Eel not only in their size, but in being of a darker colour, and in the form of the lower jaw, which is shorter than the upper. They are extremely voracious, and prey upon other fish, particularly upon crabs, when they have cast their shell. The fishermen are very fearful of the large congers, lest they should endanger their legs by clinging round them; they therefore kill them as soon as possible, by striking them on the navel. In April, 1808, one was taken at Yarmouth, which knocked down its captor before it could be secured. On the coast of Cornwall these fish constitute a considerable article of commerce, where they are salted and dried, and afterwards ground to powder, which is purchased by the Spaniards for the purpose of thickening their soups.

The NETTED EEL. The head and mouth of this beautiful species is small, without barbles. The eyes are near the upper lip, of a blue and white colour. The teeth stand apart from each other, and those in front are the longest. The body is variegated with black and white spots like network, and the dorsal fin extends the whole length of the back.

This species is from two to three feet in length, and was found near the coast of Tranquebar; but little is known of its natural history.

The CORDATED EEL. This fish is a native of the West Indian seas; its whole length is about thirty-two inches, of which the process at the end of the tail measures twenty-two; the body is of a rich silvery hue, the flexible part belonging to the snout

brown, the fins and caudal process a paler brown. The snout is connected to the back part of the head by a flexible leathery duplicature, which permits it to be extended so that the mouth points upwards, or to fall back so as to be received into a sort of case formed by the upper part of the head; below the head, on each side, is a considerable compressed semicircular space, the forepart of which is bounded by the gill-cover, which seems to consist of a moderately strong membrane; the body gradually diminishes as it approaches the tail, which terminates in a process or string of enormous length, ending in a very fine point; the pectoral fins are small, situate behind the cavity on each side the thorax, the caudal fin has five spinous rays.

But the most extraordinary fish of this kind is the ELECTRICAL EEL, or GYMNOTUS. Of the *Gymnotus*



tribe some of the species inhabit the fresh water, and others the ocean, and with the exception of three of them all are confined to the New Continent. The species which is the subject of the engraving is common in South America. It is from three to five feet in length, and ten or twelve inches in circumference in the broadest part of the body; and has the capability of swimming backward as well as for-

ward. Their colour is an olive green, and the head yellow mingled with red. The head is flat, and the mouth wide and toothless. From the point of its tail to within six inches of its head extends a fin about two inches deep, and which is an inch thick at its junction with the body. As there are several annular divisions, or rather rugæ of the skin, across the body, it would seem that the fish partakes of the vermicular nature, and can contract or dilate itself at pleasure.

The electrical shock is conveyed either through the hand, or any metallic conductor which touches the fish; and a stroke of one of the largest kind, if properly applied, would prove instant death to even the human species. This extraordinary power is given to this fish, not only for defence, but subsistence. For whenever small fishes or worms are thrown into the water, they are first struck dead by the electric power of the animal, and afterwards swallowed by him.

M. Humboldt gives an interesting account of the manner in which they catch these creatures, by what they call "fishing with horses." After having scoured the savannah, and caught about thirty wild horses and mules, they drove them into the pool in which were the electrical Eels. "The extraordinary noise caused by the horses' hoofs makes the fish issue from the mud, and excites them to combat. These yellowish and livid Eels, resembling larger aquatic serpents, swim on the surface of the water, and crowd under the bellies of the horses and mules. A contest between animals of so different an organization furnishes a very striking spectacle. The Indians, provided with harpoons and long slender reeds, surround the pool closely; and some climb

upon the trees, the branches of which extend horizontally over the surface of the water. By their wild cries, and the length of their reeds, they prevent the horses from running away, and reaching the bank of the pool. The Eels, stunned by the noise, defend themselves by the repeated discharge of their electric batteries. During a long time they seem to prove victorious. Several horses sink beneath the violence of the invisible strokes, which they receive from all sides in organs the most essential to life; and stunned by the force and frequency of the shocks, disappear under the water. Others panting, with mane erect, and haggard eyes expressing anguish, raise themselves, and endeavour to flee from the storm by which they are overtaken. They are driven back by the Indians into the middle of the water; but a small number succeed in eluding the active vigilance of the fishermen. These regain the shore, stumbling at every step, and stretch themselves on the sand, exhausted with fatigue, and their limbs benumbed by the electric shocks of the Gymnoti.

“In less than five minutes two horses were drowned. The Eel being five feet long, and pressing itself against the belly of the horse, makes a discharge along the whole extent of its electric organ. It attacks at once the heart, the intestines, and the *plexus cœliacus* of abdominal nerves. It is natural that the effect felt by the horses should be more powerful than that produced upon man by the touch of the same fish at only one of his extremities. The horses are probably not killed, but only stunned. They are drowned from the impossibility of rising amid the prolonged struggle between the other horses and the Eels.

“We had little doubt that the fishing would ter-

minate by killing successively all the animals engaged; but by degrees the impetuosity of this unequal contest diminished, and the wearied Gymnoti dispersed. They require a long rest¹, and abundant nourishment, to repair what they have lost of galvanic force. The mules and horses appear less frightened; their manes are no longer bristled, and their eyes express less dread. The Gymnoti approach timidly the edge of the marsh, where they are taken by means of small harpoons fastened to long cords. When the cords are very dry, the Indians feel no shock on raising the fish into the air. In a few minutes we had five large Eels, the greater part of which were but slightly wounded.

THE LAUNCE, OR SAND EEL,

Is known by a body slender and roundish; the head terminated by a beak; the teeth of a hairlike fineness; the fin covering the gills with seven rays. It grows to the length of nine or ten inches, and is found in most of our sandy shores during the summer months. It conceals itself among the sand, whence, during flood tide, they are rooted up, and devoured by the porpesses; and on the recess of the tide they are drawn out with a hook by the fishermen. They are commonly made use of as a bait for other fish, but they are also very delicate eating.

¹ The Indians assured us, that when the horses are made to run two days successively into the same pool, none are killed the second day.

THE WOLF FISH

HAS the body roundish and slender; the head large and blunt; the fore teeth, above and below, conical; the grinding teeth, and those in the palate, round; the fin covering the gills has seven rays.

This animal seems to be confined to the northern seas, and sometimes is found near the coasts of Scotland. It grows to a very large size, being frequently taken of the length of seven feet, and even more. It is a most ravenous and fierce fish, and when taken, fastens upon every thing within its reach. It is said even to bite so hard, that it will seize upon an anchor, and leave the marks of its teeth on it. It feeds almost entirely on shell-fish, the hardest of which it easily crushes with its jaws. It has so formidable and disagreeable an appearance, that it is only eaten by the fishermen, who, however, prefer it to halibut.

THE SWORD FISH



Is very common in the Mediterranean, and is much esteemed for food by the Sicilians, who consider it as equal to the sturgeon. It grows to a very large size, upwards of twenty feet in length. It is of a long and rounded body, largest near the head, and tapering by degrees to the tail. The skin is rough,

the back black, and the belly white. It has one fin on the back, running almost its whole length. It has one pair of fins also at the gills. But the most remarkable part of this fish is the snout, which, in the upper jaw, runs out in the figure of a sword, sometimes to the length of three feet, and is of a substance like a coarse kind of ivory. The under jaw is much shorter.

The Sword Fish has wonderful strength. The Leopard man of war was struck by one of them; and though the animal was following the ship, and consequently gave the blow with less force than it otherwise would have done, yet the sword penetrated nearly a quarter of a yard through the sheathing and timber, and was broken off by the shock. Eight or nine strokes from a hammer weighing a quarter of a hundred weight would be required to drive an iron pin the same depth into wood. In the British Museum there is also a plank of a ship, through which a fish impelled the whole length of his sword; not, however, without losing his life by the effort.

The Sword Fish has an antipathy to the whale, and no sooner meets than he assails him. Two will sometimes combine in the attack. The whale can defend himself only with his tail, which the activity of his adversary generally enables him to evade. The whale dives in vain, for he is pursued by his pertinacious tormentor, and he is at length compelled to take flight.

There is another species of Sword Fish, called the BROAD-FINNED. Both are insatiably voracious.

The second division consists of the JUGULAR FISHES, or those *which have ventral fins before the pectoral*, or nearer to the gills.

THE DRAGONET

Is the first genus which naturalists have remarked in this division. Its general characters are the upper lip doubled, the eyes very near each other, two breathing apertures on the hind part of the head, and the first rays of the dorsal fin extremely long. There are two species described by Mr. Pennant.

The GEMMEOUS DRAGONET, which is about ten or twelve inches long, with a large head, and a body slender, round, and smooth. The colours of this fish are extremely beautiful; when it is just taken, they are yellow, blue, and white. The blue has all the splendour of the most beautiful gems. The throat is black; and the membranes of the fins are very thin and delicate. The old English writers have called this fish the yellow gurnard, but in reality it has no one character of that genus.

The SORDID DRAGONET resembles the preceding, but its first dorsal fin is not so long, nor are its colours so brilliant and lively.

THE WEEVER

Is known sometimes to grow to the length of twelve inches, though it is commonly found much smaller. The lower jaw slopes down very abruptly, and its back is armed with strong spines. It buries itself in the sand, leaving only its nose out, and when trod upon strikes forcibly with its spines, which are said to be venomous, though probably the pain and inflammation attending the wounds which it inflicts depend on the habit of the person or the part which is struck. It is good food.

THE COD



Is a most extensive genus, including a number of well known and useful fishes. The general characters are a smooth head, the fin that covers the gills consisting of seven rays, all the fins covered with a common skin, the ventral fins slender, and ending in a point. It has teeth in the jaws, and a series of small teeth closely set together in the palate. Most of the species have also the chin bearded.

The **COMMON COD** is short in proportion to its bulk; the belly is large and prominent; its eyes are large; and at the end of the lower jaw is a small beard. It is ash-coloured, spotted with yellow, and the belly white; on the back are three soft fins. It is one of the most prolific of fish.

There are also the **THREE-BEARDED** and **FIVE-BEARDED CODS**, both of which differ from the common sort, not only in this character, but in having only two back fins, the latter very long.

The Cod seems to be the foremost of the wandering tribe of fishes, and is only found in our northern part of the world. Their principal food consists of the smaller species of fish, worms, shell-fish, and crabs; and their stomachs are capable of dissolving the major part of the shells which they swallow. They grow to a great size. The largest that ever was seen was taken at Scarborough in 1775. It weighed seventy-eight pounds, and was five feet

eight inches long. This animal's chief place of resort is on the banks of Newfoundland, and the other sand banks that lie off Cape Breton. That extensive flat seems to be no other than the broad top of a sea mountain, extending for above five hundred miles long, and surrounded with a deeper sea. Hither the Cod annually repair in numbers, beyond the power of calculation, to feed on the quantity of worms that are to be found there in the sandy bottom. Here they are taken in such quantities, that they supply all Europe with a considerable share of provision. The English have stages erected all along the shore for salting and drying them; and the fishermen, who take them with the hook and line, which is their method, draw them in as fast as they can throw out. An expert hand will sometimes capture four hundred in a day. This immense capture, however, makes but a very small diminution, when compared to their numbers; and when their provision there is exhausted, or the season for propagation returns, they go off to the polar seas, where they deposit their spawn. Previous to the discovery of Newfoundland, the principal fisheries for Cod were in the Iceland seas, and off the western isles of Scotland.

THE HADDOCK

Is a well known fish of this genus, which much resembles the cod, but is smaller; it is also distinguished by a black mark on each side beyond the gills, which superstition ascribes to the impression which St. Peter left with his finger and thumb, when he took the tribute money out of the fish's mouth, which tradition would have us believe to have been of this species.

THE WHITING POUT

Is another fish of the same kind, which in size seldom exceeds a foot. The back is much arched ; the scales larger than that of the cod ; and on each side of the jaw are seven or eight punctures.

THE RIB

Grows also to the length of a foot, and the sides are finely tinged with gold.

THE POOR

Is the only species of cod found in the Mediterranean ; it is not more than six inches long.

THE COAL FISH

TAKES its name from the black colour it sometimes assumes. It grows to the length of two feet and a half, and is of a more elegant shape than the cod. The flesh is little esteemed when fresh, but is commonly salted and dried for sale. The fry of this fish, however, is called *Parr*, and is esteemed good food.

THE POLLOCK

DOES not grow to a very large size, but is a very good eating fish. The first back fin has eleven rays, the middle nineteen, the last sixteen. The tail is a little forked ; the colour of the back is dusky, in some inclining to green ; the belly is white.

THE WHITING

Is a fish of an elegant form, and the most delicate food of all the genus. The first back fin has fifteen rays, the second eighteen, the third twenty. The back is a pale brown, and the belly silvery white. It seldom exceeds twelve inches in length.

This fish is found in the Baltic and North seas, though not numerous in the former; but they are



plentiful on the coasts of Holland, France, and England, where they are reckoned the most delicate and wholesome species of the genus. Their flesh is so easily digestible, that it is prescribed to persons the powers of whose stomachs are impaired. They attain the length of a foot, sometimes one and a half, rarely two; but on the Doggerbank they are caught of the weight of from four to eight pounds. They live at the bottom of the sea, feeding on little crabs, worms, and young fry, particularly of sprats and herrings; which therefore are the usual baits. They are caught usually with a ground-line, sixty-four fathoms long, with from a hundred to two hundred hooks. One vessel throws out about twenty of these lines, armed with four thousand hooks, and they need only lie about two or three hours. The greatest fishery for Whittings is carried on by the French from December to February; by the English and Dutch in the spring. They appear in such quantities on our coasts, as to form shoals of three miles long and a mile and a half wide; and, as they are caught in too great numbers to be eaten fresh, they salt them, by which, however, they lose the delicacy of their taste, and are then called buckthorn; they are often used in this state as ships' stores. As they eagerly pursue the herrings, they are often taken in the same nets.

The seven last species have three back fins; the HAKE, the LING, and the BURBOT, have only two; and the TORSK has only one.

THE BLENNY

HAS the body oblong; the head obtuse; the teeth a single range; the fin covering the gills with six spines; the ventral fins have two small blunt bones in each. It has one dorsal fin which is prickly, and several of the species are crested, or have a small fin like a crest upon their heads. It is a small fish, measuring from five to seven inches, and is found among stones upon rocky coasts, and sometimes in the mouths of rivers. One species of this fish is viviparous, and brings forth two or three hundred at a time. These are very common at the mouth of the Eske, at Whitby, in Yorkshire.

THE BUTTERFLY-FISH.

THIS fish, which is a species of Blenny, has a long, large head, narrowed at the sides; and prominent eyes of considerable magnitude, with black pupil, and orange-coloured iris; the mouth is large; the jaws are of equal length, with a row of very narrow teeth standing close to each other; the tongue is broad, but short. The gills are wide, the cheeks large, and of a silver colour. The back is round, and of a dark green; the belly is short but broad. The ground colour of the fish is a dirty green, with brown spots; there are some, however, whose principal colour is a clear blue. The dorsal fin is spotted with black. This fish inhabits the Mediterranean Sea: and at Marseilles, Sardinia, and Venice, is common in the markets with other small fish. It attains to the length of six or eight inches; lives near the shore, among the rocks and weeds; and feeds on crabs and small shell-fish. Its scales are hardly visible. Some naturalists describe this fish

as having two dorsal fins; while others say it has but one. This contradiction must arise from these fins being sometimes united by a membrane, and sometimes not.

THE STAR GAZER, OR URANOSCOPUS,

HAS a large quadrangular head, covered with a rough helmet, ending in two spines above, and five smaller ones below. The mouth opens upwards, and when the lower jaw is removed, the tongue appears, which is thick, short, and strong, and full of small teeth. Inside of the lower jaw, there is a membrane terminating by a long filament; the fish, opening its mouth, sets this in motion, which attracts little fish, who endeavour to seize it, and are instantly devoured. There are two barbles from each lip, which serve for the same purpose; and this fish often conceals itself among the seaweed, leaving only the barbles visible, when it is watching for its prey. In the upper jaw there are two oval apertures, and several little barbles at the lower; and near each eye is a round aperture. The eyes lie quite at the top of the head, very close together, and prominent, as if starting upwards; the pupil is black, the iris yellow. The Star Gazer inhabits the Mediterranean, in deep places near the shore. It seldom exceeds a foot in length.

The third division is called the THORACIC, or *those fishes which have the belly fins immediately under the pectoral.*

THE GOBY, OR ROCK-FISH,

Is not above six inches long. The body is soft slippery, and slender; the head large; the cheeks inflated. It has two back fins; and the ventral fins coalesce, and form a sort of funnel, by which these fish fix themselves immoveably to the rocks.

THE REMORA, OR SUCKING-FISH,

Which has been already in part described, appears to belong to this genus. In shape it resembles a herring, but on the head has an apparatus for fixing itself to a ship, or to the body of another fish. It is an inhabitant of the Indian Ocean.

THE BULL-HEAD

Is a well known genus, including several species, all of which have a large head armed with spines.

THE RIVER BULL-HEAD, OR MILLER'S THUMB,

Is very common in all our clear lakes. It rarely exceeds three inches in length, and is easily distinguished by a broad flat head, excellently adapted for insinuating itself under stones. It is of a dusky colour, mixed with dirty yellow, and spotted with white, black, and brown; and has two back fins.

THE POGGE, OR ARMED BULL-HEAD,

Is found on most of the European coasts, and is distinguished by its large bony head, which is armed at the nose with four short upright spines, and by a number of white beards at the throat. It is about five inches long.

But the most formidable of this genus is the FATHER LASHER, or SEA SCORPION. It is about eight or nine inches long. The nose, the top of the head, and the back fins are armed with strong sharp spines. It is exceedingly common in the Newfoundland seas, and makes a principal article of food in Greenland.

THE FLYING SCORPÆNA.



This fish has a truncated head, which is broad in front, compressed at the sides, and furnished with pretty large spines and fringed barbles; the longest of which are over the eyes, and the broadest near the corners of the mouth. On the body and head are several brown stripes, with yellow and white streaks alternately shining between. The mouth is large; the jaws are of equal length, and armed with a great number of little sharp teeth. The tongue is loose,

thin, and pointed at the end; the lips are also moveable; the upper lip is composed of two bones, which form a furrow in the middle where they join. The nostrils are single, and lie midway between the mouth and eyes. The eyes have a black pupil, and a white iris with blue and black rays. The gill covert terminates in a sharp angle, and is furnished with very minute scales; the aperture is wide, and the bronchial membrane is in great part naked. The scales on the body are small, and lie one over the other like tiles on a house. The lateral line consists of little risings and white points. The rays of the pectoral fins are simple, and the membrane has a violet ground with white dots. These large fins probably enable the fish to dart out of the water when pursued by an enemy. The first twelve rays of the dorsal fin are spiny, spotted brown and yellow; united below by a dark brown membrane, and at liberty above; the last twelve rays, as well as those of the anal and tail fins, are divided at the ends, and spotted black and yellow. The ventral fins are violet, with white dots. The first ray is hard. The skin is like parchment.

This variegated fish is found in the rivers at Amboyna and Japan; but even there it is uncommon. It is known also at Tranquebar. The flesh is white, firm, and well tasted, like our perch, but the fish does not grow so large. It is of the voracious kind, feeding on the young of other species; entire fishes of two inches and a half long have been found in the stomach.

THE DOREE, OR JOHN DOREE,

Is mentioned in the writings of Ovid and Pliny. It is almost equally famous in the legends of superstition with the haddock, and is its rival in the honour

of being the fish from which St. Peter took the tribute money, leaving on its sides the mark of his finger and thumb. The modern Greeks call it the fish of St. Christopher, from a legend, which relates that it was trodden on by that saint, as he was carrying his divine burthen across an arm of the sea. The



form of this fish is very disgusting. Its body is oval, and much compressed at the sides. Its snout is long, and its mouth wide. The first back fin consists of ten spiny rays, with long filaments; the second of twenty-four soft rays. The tail is round at the end. The colour of the body is olive, varied with light blue and white; while living it has the appearance of gilding, whence its name *Dorée* (gilt). It is found in the North Sea, the British Channel, the Atlantic, and the Mediterranean.

Such is the unpleasant form of this fish, that it was long before it attracted the notice of the epicure; Mr. Pennant observes, indeed, that to the celebrated actor, Mr. Quin, it is chiefly indebted for its reputation. Quin is said to have travelled to Plymouth that he might eat this fish in perfection; and to have exclaimed that if, in angling for him, his Satanic Majesty were to bait his hook with a Doree, he could not refrain from biting.

THE OPAH

Is another of this genus, which sometimes arrives at an immense size. One was caught at Torbay in 1772, which weighed a hundred and forty pounds. It was in length four feet and a half; in breadth two feet and a quarter, though the greatest thickness was only four inches. The general colour was a transparent scarlet varnish, spangled with silver spots of various sizes. The mouth of this fish is exceedingly small for its size.

THE FLOUNDER

Is a very extensive genus, including those innumerable species which are known by the common term flat fish, and which are distinguished from all others by one invariable characteristic, viz. that of having both the eyes on the same side of the head.

THE HALIBUT

Is by much the largest of the genus, weighing commonly from one hundred to three hundred pounds. The Halibut is the most voracious of fishes, and has been known to swallow even the lead which seamen make use of for the purpose of sounding the depth. Its back is a dusky colour; its belly pure white. The flesh is very coarse and indifferent food. It is the narrowest fish in proportion to its length of any of this genus, except the sole.

THE PLAISE

Is sometimes known to weigh fifteen pounds. It is easily distinguished by the upper part of the body, which is dusky, being marked with large orange-coloured spots.

THE FLOUNDER, OR FLUKE,



MAY be easily known from every other fish of this genus, by a row of sharp small spines, which surround its upper sides, and are just placed where the fins join to the body. It differs principally from the plaice in wanting the row of six tubercles behind the left eye. It is found in great abundance in most of the European rivers, up which it ascends even beyond the influence of the tide. The back is of a pale brown, sometimes marked with a few obscure spots.

THE DAB

Is found often along with the flounder, but is less common. It is smaller than either the plaice or the flounder, but is more esteemed as food. The back is generally of a uniform brown colour, sometimes clouded with a darker. It is in season from February to April.

THE TURBOT,

LIKE some others of the flat fish, grows to a great size. It has occasionally been known to weigh from twenty-five to thirty pounds. In its general form it is somewhat square. Flat fish swim sideways, on which account they are styled pleuronectes by Linnaeus. The eyes of all of them are situated on one side of the head, those of the Turbot on the left; and

it is a curious circumstance that, while the under parts of their body are of a brilliant white, the upper



parts are so coloured and speckled as, when they are half immersed in the sand or mud, to render them imperceptible. Of this resemblance they are so conscious that, whenever they find themselves in danger, they sink into the mud, and continue perfectly motionless. This is a circumstance so well known to fishermen, that within their palings on the strand they are often under the necessity of tracing furrows with a kind of iron sickle, to detect by the touch what they are not otherwise able to distinguish. But the Turbot does not thus hide itself for security alone. It resorts to this stratagem as an ambush for obtaining its prey, whence it pounces forth on the smaller kinds of fish that incautiously approach it.

The finest Turbot in the world are found off the northern shore of England, and some parts of the Dutch coast. The manner of fishing for them off the Yorkshire coast is as follows: three men go out in each of the boats, each man provided with three lines; every one of which is furnished with two hundred and eighty hooks, placed exactly six feet two inches asunder. These are coiled on an oblong piece of wickerwork, with the hooks baited, and placed very regularly in the centre of the coil. When they are used, the nine are generally fastened

together so as to form one line with above two thousand hooks, and extending near three miles in length. This is always laid across the current. An anchor and buoy are fixed at the end of each man's line. The boats for this purpose are each about a ton burthen; somewhat more than twenty feet in length, and about five feet in width.

The general bait used for taking Turbots is fresh herring cut into proper sized pieces, at which they bite most readily; they are also partial to the smaller lampreys, pieces of haddocks, sandworms, muscles, and limpets; and when none of these are to be had, the fishermen use bullock's liver. They are so extremely delicate in the choice of their baits, as not to touch a piece of herring or haddock that has been twelve hours out of the sea; nor will they touch any bait that has been bitten by another fish.

THE SOLE.



This well known and delicious fish is remarkable for one extraordinary circumstance; they have been known to feed on shell-fish, although they are furnished with no apparatus whatever in their mouth for reducing them to a state calculated for digestion. The stomach, however, has a dissolvent power, which makes up for the want of a masticating apparatus. But the most usual food for Soles is the spawn and young of other fish.

These fish are found on all the British coasts; but those off the western shores are much superior in

size to what are taken in the north, since they are sometimes found of the weight of six or seven pounds. The principal fishery for them is in Torbay. In the winter they usually retire into deep water; but frequent the seashores and the mouths of rivers at the approach of spring. On the sand banks out at sea, they are caught in trawl nets, and on the shore they are taken in seine nets. The Sole will keep longer sweet out of water than almost any other fish, and is even much better for being kept a while.

THE SMOOTH SOLE, OR LANTERN FISH,

Is almost peculiar to the Cornish coast; and is thin, white, and nearly pellucid.

THE PEARL

RESEMBLES the turbot, but is inferior food; its back is of a deep brown, with spots of a dirty yellow.

The WHIFF resembles the halibut, but is smaller.

THE GILT-HEAD

TAKES its name from its predominant colour, the forehead and sides resembling gold, though the latter are tinged with brown. It has but one back fin, which reaches the whole length of the body. In form it in some degree resembles the bream. It is found in deep waters, on bold rocky shores; it subsists chiefly on shell-fish, and some of the species grow to the weight of ten pounds.

Besides the LUNATED, which is the most common, and takes its name from a semilunar gold spot under the eyes, there are the RED, and the TOOTHED or STREAKED GILT-HEADS, the last of which is distinguished by two canine teeth on each side.

THE STREAKED GILT-HEAD.



THE head is compressed, and scaleless as far as the eyes; the mouth large; the jaws are of equal length, with two strong canine teeth in each; the back teeth are flat, like those of quadrupeds. The nostrils are single, and near the eyes, which are small, with a black pupil and blue iris. The body is yellow, with six or seven brown transverse stripes. This fish is found on the shores of Japan and the Red Sea.

There is a fish in some degree resembling the preceding, which is called by naturalists, by way of eminence, the DORADO, but which the sailors erroneously term the dolphin; it is chiefly found in the tropical climates; and is at once the most active and the most beautiful of the finny race. It is about six feet long; the back all over enamelled with spots of a bluish green and silver; the tail and fins of a gold colour; and all have a brilliancy of tint, that nothing but nature's pencil can attain to: the eyes are placed on each side of the head, large and beautiful, surrounded with circles of shining gold. In the seas where they are found, these fish are always in motion, and play round ships in full sail, with ease and security: for ever either pursuing or pursued, they are seen continually in a state of warfare; either defending themselves against the shark, or darting after the smaller fishes.

THE FLYING FISH.



ABOVE all others, the Flying-fish most abounds in these seas; and as it is a small animal, seldom growing above the size of a herring, it is chiefly sought by the dorado. Nature has furnished each respectively with the powers of pursuit and evasion. The dorado being above six feet long, yet not thicker than a salmon, and furnished with a full complement of fins, cuts its way through the water, with amazing rapidity; on the other hand, the Flying-fish is furnished with two pair of fins, longer than the body, and these also moved by a stronger set of muscles than any other. This equality of power seems to furnish one of the most entertaining spectacles those seas can exhibit. The efforts to seize on the one side, and the arts of escaping on the other, are perfectly amusing. The dorado is seen, upon this occasion, darting after its prey, which will not leave the water, while it has the advantage of swimming, in the beginning of the chase. But, like a hunted hare, being tired at last, it then has recourse to another expedient for safety, by flight. The long fins, which began to grow useless in the water, are now exerted in a different manner and different direction to that in which they were em-

ployed in swimming: by this means the timid little animal rises from the water, and flutters over its surface, for two or three hundred yards, till the muscles employed in moving the wings, are enfeebled by that particular manner of exertion. By this time, however, they have acquired a fresh power of renewing their efforts in the water, and the animal is capable of proceeding with some velocity by swimming: still, however, the active enemy keeps it in view, and drives it again from the deep; till at length, the poor little creature is seen to dart to shorter distances, to flutter with greater effort, and to drop down at last into the mouth of its fierce pursuer. But not the dorado alone, all animated nature seems combined against this little fish, which seems possessed of double powers, only to be subject to greater dangers. For though it should escape from its enemies of the deep, yet the tropic bird, and the albatross, are for ever upon the wing to seize it. Thus pursued in either element, it sometimes seeks refuge with a new enemy: and it is not unfrequent for whole shoals of them to fall on ship-board, where they furnish man with an object of useless curiosity.

THE WRASSE

INCLUDES several species, the most common of which is the ANCIENT WRASSE, or OLD WIFE. It is of a clumsy shape not unlike a carp, and covered with large scales; it has one large back fin, which consists of sixteen sharp spiny rays, and nine soft ones. The tail consists of fourteen soft branching rays, and is rounded at the end. They vary greatly in colour, some being of a dirty red, and others beautifully

striped. They are generally found in deep water, adjacent to the rocks, and feed upon shell-fish. They grow to the weight of four or five pounds.

Besides these species, Mr. Pennant has enumerated the **BALLAN**, the **BIMACULATED**, **TRIMACULATED**, **STRIPED**, and **GIBBOUS WRASSE**, the **GOLDSINNY**, the **SCOMBER**, and the **COOK**.

THE PERCH



OF Aristotle and Ausonius is the same with that of the moderns. That mentioned by Oppian, Pliny, and Athenæus, is a sea-fish, probably of the *Labrus* or *Sparus* kind, being enumerated by them among some congenerous species. Our Perch was much esteemed by the Romans. Nor is it less admired at present, as a firm and delicate fish; the Dutch, indeed, are particularly fond of it when made into a dish called water souchy.

It is a gregarious fish, and loves deep holes and gentle streams. It is a most voracious fish, and eager biter; if the angler meets with a shoal of them, he is sure of taking every one. It is a common notion that the pike will not attack this fish, being fearful of the spiny fins which the Perch erects on the approach of the former. This may be true in respect to large fish; but it is well known the small ones are the most tempting bait that can be laid for the pike.

The Perch is a fish very tenacious of life: we have known them carried near sixty miles in dry straw, and yet survive the journey. These fish seldom grow to a large size: we once heard of one that was taken in the Serpentine river, Hyde Park, that weighed nine pounds; but that is very uncommon.

The body is deep; the scales very rough; the back much arched; side-line near the back. The irides golden; the teeth small, disposed in the jaws, and on the roof of the mouth; the edges of the covers of the gills serrated; on the lower end of the largest is a sharp spine. The first dorsal fin consists of fourteen strong spiny rays; the second of sixteen soft ones; the pectoral fins are transparent, and consist of fourteen rays; the ventral of six; the anal of eleven. The tail is a little forked. The colours are beautiful; the back and part of the sides being of a deep green, marked with five broad black bars pointing downwards; the belly is white, tinged with red; the ventral fins of a rich scarlet; the anal fins and tail of the same colour, but rather paler.

In a lake called Llyn Raithlyn, in Merionethshire, is a very singular variety of Perch; the back is quite hunched, and the lower part of the back-bone, next the tail, strangely distorted; in colour, and in other respects, it resembles the common kind, which are as numerous in the lake as these deformed fish. They are not peculiar to this water; for Linnæus takes notice of a similar variety found at Fahlun, in his own country. We have also heard that it is to be met with in the Thames, near Marlow.

THE BASSE

Is a larger and coarser kind of perch, which sometimes grows to the weight of fifteen pounds. It is, however, of rather a longer make, more resembling that of a salmon. The back is dusky, tinged with blue, and the belly white. The SEA PERCH grows to about a foot long. The head is large and deformed, and covered with sharp spines. The colour is red, with a black spot on the covers of the gills, and some transverse dusky lines on the sides.

THE RUFFE



Is a well known fish. It is armed with spines like the perch, but has only one back fin. It is of a dirty green, almost transparent, and spotted with black. It is found in shoals in the deep parts of running streams, and is esteemed good food. It seldom exceeds six inches in length.

THE HOLOCENTERS.

NEARLY allied to the perch tribe are the Holocenters; one of the most remarkable of which genus is the LANCEOLATED HOLOCENTER. It has a large

head, with a mouth in proportion ; the bones of the lips are broad ; the jaws are of equal length, and armed with several rows of little sharp teeth ; as is the palate ; but the tongue is smooth and moveable. The nostrils are double, the hinder pair near the



eyes. Hereabout begin the scales, which are small, tender, and smooth. The pupil of the eye is black, the iris blue. The front operculum is made of two small rounded plates, of which the hinder one is strongly serrated. The gills have a wide aperture, and one half of the membrane is concealed. The body is broad, the belly prominent, and the anus in the middle of the body. The colour of the fish is silvery with transverse stripes and spots of brown. The soft rays of the fins are mostly divided into four branches. This species is produced in the East Indies, and takes its name from the shape of the fins. In the Indian ocean, and on the coasts of Africa and America there are found several other varieties of the Holocenter which are remarkable for the brightness of their colours. The structure of their mouths proves them to be carnivorous. They mostly prey on crabs and young fish, which they swallow whole. Their flesh is much esteemed by the natives, it being pleasant and wholesome food.

THE STICKLE-BACK

Is a well known little fish. In the fens of Lincolnshire they are found in such numbers, that they are used to manure the land. There are three species, the COMMON, or THREE SPINED, the TEN SPINED, and the FIFTEEN SPINED. The two first seldom reach the length of two inches, the latter sometimes grows to that of six, and is found in the sea only.

THE MACKEREL GENUS

Is distinguished by a number of small fins, between the back fin and the tail. The common Mackerel is a beautiful fish, which is well known for the seasonable visits which it pays to our shores. Nothing can equal the brilliancy of its colours, which are a fine green, varied with blue and black, and which death indeed impairs, but cannot totally destroy.

THE MACKEREL,



As well as the haddock and the whiting, are thought, by some, to be driven upon our coasts rather by their fears than their appetites; and it is to the pursuit of the larger fishes we owe their welcome visits. It is much more probable, that they come for that food which is found in more plenty near the sea shore, than farther out at sea. The Mackerel emits a phosphoric light when fresh from the sea. When taken out of the water it soon dies, and even in the water, if it advance with too much

impetuosity against the net. It is caught with that instrument, or with a hook baited with bits of red cloth, or small herrings, and pieces of other kinds of fish or flesh. In some places it is taken by lines from boats, as during a fresh gale of wind it readily seizes a bait: it is necessary that the boat should be in motion, in order to drag the bait along near the surface of the water. The great fishery for Mackerel is on some parts of the west coast of England. This is of such an extent, as to employ in the whole a capital of nearly two hundred thousand pounds. The fishermen go out to the distance of several leagues from the shore, and stretch their nets, which are sometimes several miles in extent, across the tide, during the night. The meshes of these nets are just large enough to admit the heads of tolerable large fish, and catch them by the gills. A single boat has been known to bring in, after one night's fishing, a cargo that has sold for nearly seventy pounds.

THE TUNNY

RETAINS not only the character, but the habits of the mackerel. They resort in vast shoals to the Mediterranean at certain seasons, and, from the earliest periods of history, have constituted a considerable branch of commerce there. The Tunny, however, differs greatly from the mackerel in size. One which Mr. Pennant saw at Inverary weighed four hundred and sixty pounds. It was seven feet ten inches in length, and the circumference in the largest part was five feet seven, and near the tail only one foot six. The pieces, when fresh cut, appear like raw beef, but when boiled turn pale, and have something the flavour of salmon.

THE SCAD, OR HORSE MACKEREL,

Is much smaller than the tunny. It is distinguished by a large black spot on the covers of the gills, and by the second back fin reaching almost to the tail. It is tolerable food.

THE SURMULLET

HAS the body slender; the head almost four cornered; the fin covering the gills with three spines; some of these have beards; it was a fish highly prized by the Romans, and is still considered as a very great delicacy.

THE GURNARD GENUS

Is known by a slender body, the head nearly four cornered, and covered with a bony coat; the fin covering the gills with seven spines: the pectoral and ventral fins strengthened with additional muscles and bones, and very large for the animal's size.

Of the Gurnard Mr. Pennant has remarked five species. The GRAY, the RED, the PIPER, the SAPPHIRINE, and the STREAKED. They have all nearly the same nature and manners. They are taken in deep water, with no other bait than a red rag, and are esteemed good food.

THE BOW BANDED CHÆTODON.

THE head of this curious fish is large; the eyes are small and placed near the top; the pupil is black, the iris gold yellow. The aperture of the gills is wide, and at the covert there is a spine. The lateral

line is made up of white dots. The ground colour is brown, which towards the back inclines to black; and looks as if covered with velvet, and inlaid with ivory. The tail is not divided. This species in-



habits the coasts of Brazil, and other parts of South America; and grows from three to six inches in length.

In winter or the rainy seasons, they lie in deep holes near the shore, which they quit in spring to come into the shallows near the land: during the summer, when the sun in those climates blazes the whole day with irresistible fierceness, they keep at the depth of twenty or thirty yards, which protects them from its intense heats.—They spawn in the coldest time of the year: and being a lively fish, great numbers of the young fry are caught for the sake of being kept in vases, but in which they seldom come to maturity, and never increase.

The BEAKED CHÆTODON. This fish, which is by far the most curious of the tribe to which it belongs, frequents the shores and mouths of rivers in India, and about the Indian islands. Its length is somewhat more than six inches, and its colour is whitish, or very pale brown, with commonly four or five black bands running across the body, which is ovate and compressed. The dorsal and anal fins are very

large, and on the former there is an eyelike spot of considerable magnitude. The snout is lengthened and cylindrical, and is the instrument by means of which the animal obtains its subsistence. Flies and other small insects that hover over the water constitute the principal food of this fish. When it sees a fly on a plant it slowly and cautiously approaches, as perpendicularly as possible under the object, puts its body in an oblique direction, with its mouth and eyes near the surface, fixes the latter on the insect, remains for a moment motionless, and then without showing its mouth above the surface, darts a drop of water from its tubular snout. So dexterously does it take its aim, that at the distance of four, five, or six feet, it hardly ever fails to bring the fly into the water. From this circumstance it derives the name which some naturalists give to it, of the *Jaculator*, or *Shooting-fish*.

THE PARROT FISH.

THE head of this fish is somewhat similar to that of the carp. The body is broad, the tail narrow. The ground colour is red, which is beautifully relieved by broad silvery stripes all along the body ; the belly is white. The fins are small ; the scales broad, thin, finely radiated, and very loose. The pectoral, tail, and ventral fins are yellow at their origin, and gray at the extremities ; and a kind of spine runs along the root of the ventral fin. This species is found in both Indies.

The fourth division of the spinous fishes consists of the ABDOMINAL, or those which have the *ventral fins behind the pectoral*, that is nearer the tail, as in the salmon.

THE LOACH



Is the first genus which is noticed in this division, and is a well known little fish, which never exceeds four inches in length. In its general aspect it has a pellucid appearance. It is distinguished by an oblong body; almost equally broad throughout; the head small, a little elongated: the eyes in the hinder part of the head; the fin covering the gills from four to six rays; the covers of the gills closed below. The back is mottled with irregular collections of small black dots.

THE FOUR-EYED LOACH.



THE head of this species is foreshortened and broader than it is high. The lower jaw is the longest, and it lengthens downwards, and not in front, like other fish. Both jaws, as well as the palate and tongue, are armed with teeth; the barbles arise from the

corners or extremities of the upper lip. The nostrils are single, and near the mouth. The eyes are very remarkable: each containing two parts or a double pupil, which has caused it to be called four eyes. The cavity of the eyes differs from other fish: this cavity is not a cylinder, as in other animals, but a part of one only; on each side at the top of the head there is an arched thin bone advancing towards the skull; these bones face each other with their concave surfaces; the eye is cylindrical, and is fixed in this cavity, but rises above it: the pupil is seen above the surface, enclosed in a black iris; as the cornea is equally luminous in the internal part, the pupil is seen double. The gill coverts are smooth and slippery; the body upwards is broader than it is thick; but towards the tail it takes a rounded form. The sides are ornamented with five longitudinal dark brown stripes, which run quite to the tail, where the two outermost are connected by a transverse stripe, and the three middlemost by another. The lateral line is scarcely visible; the anus is nearer to the tail than to the head. The dorsal fin is small, and near the tail. All the fins, except the ventrals, are covered mostly with small scales; but on the body the scales are larger. It produces its young alive.

This singular fish is found in the rivers of Surinam, near the seacoast. It multiplies fast, and is esteemed by the inhabitants as good food; it grows from six to ten inches in length. Linnæus refers it to the loach genus, from which, however, it differs so much that Bloch makes a new genus of it, under the name of *Anableps*.

THE SALMON,



WHICH was known to the Romans, but not to the Greeks, is distinguished from other fish by having two dorsal fins, of which the hindermost is fleshy and without rays; they have teeth both in the jaws and the tongue, and the body is covered with round and minutely striated scales. Gray is the colour of the back and sides, sometimes spotted with black, and sometimes plain. The belly is silvery. It is entirely a northern fish, being found both at Greenland and Kamtschatka, but never so far south as the Mediterranean. About the latter end of the year the Salmon begin to press up the rivers, even for hundreds of miles, to deposit their spawn, which lies buried in the sand till spring, if not disturbed by the floods, or devoured by other fishes. In this peregrination it is not to be stopped even by cataracts. About March the young ones begin to appear, and about the beginning of May the river is full of the Salmon fry, which are then four or five inches long, and gradually proceed to the sea. About the middle of June the earliest fry begin to return again from the sea, and are then from twelve to fourteen inches long. The growth of this fish is so extraordinary, that a young Salmon being taken at Warrington, and which weighed seven pounds on the 7th of February, being marked with a scissors

on the back fin, was again taken on the 17th of March following, and was then found to weigh seventeen pounds and a half.

Rapid and stony rivers, where the water is free from mud, are the favourite places of most of the Salmon tribe, the whole of which is supposed to afford wholesome food to mankind. The chief English rivers in which Salmon are caught are the Thames, the Severn, the Trent, and the Tyne. The Scotch fisheries are very productive. These fish when taken out of their natural element very soon die; to preserve their flavour they must be killed as soon as they are taken out of the water. The fishermen usually pierce them near the tail with a knife, when they soon die with loss of blood.



THE SEA-TROUT, OR SALMON-TROUT,

MIGRATES like the salmon up several of our rivers, spawns, and returns to the sea. The shape is thicker than the common Trout. The head and back are dusky, with a gloss of blue and green, and the sides, as far as the lateral line, are marked with large irregular spots of black. The flesh, when boiled, is red, and resembles that of the salmon in taste.

THE WHITE TROUT

APPEARS much of the same nature, and migrates out of the sea into the river Esk, in Cumberland, from July to September.

THE SAMLET



Is considered by Mr. Pennant at a distinct species, and not as the fry of the salmon, as some persons have supposed. In this case it must be considered as the smallest of the trout genus, from which, however, it materially differs. It seldom exceeds six or seven inches in length.

THE TROUT.

It is a matter of surprise that this common fish has escaped the notice of all the ancients, except Ausonius. It is also singular, that so delicate a species should be neglected, at a time when the folly of the table was at its height; and that the epicures should overlook a fish that is found in such quantities in the lakes of their neighbourhood, when they ransacked the universe for dainties. The milts of *muræna* were brought from one place; the livers of *scari* from another; and oysters even from so remote a spot as Sandwich: but there was and is a fashion in the article of good living. The Romans seem to have despised the Trout, the piper, and the doree; and we believe Mr. Quin himself would have resigned the rich paps of a pregnant sow, the heels of camels, and the tongues of flamingos, though dressed by Heliogabalus's cooks, for a good jowl of salmon with lobster sauce.

The general shape of the Trout is rather long than broad; in several of the Scotch and Irish rivers, they grow so much thicker than in those of England, that a fish, from eighteen to twenty-two inches, will often weigh from three to five pounds. This is a fish of prey, has a short roundish head,



blunt nose, and wide mouth, filled with teeth, not only in the jaws, but on the palate and tongue; the scales are small, the back ash colour, the sides yellow, and, when in season, it is sprinkled all over

the body and covers of the gills with small beautiful red and black spots: the tail is broad.

The colours of the Trout, and its spots, vary greatly in different waters, and in different seasons; yet each may be reduced to one species. In Llyn-divi, a lake in South Wales, are Trouts called Coch-y-dail; marked with red and black spots as big as sixpences; others unspotted, and of a reddish hue, that sometimes weigh near ten pounds, but are bad tasted.

In Lough Neagh, in Ireland, Trouts are called Buddaghs, which sometimes weigh thirty pounds.

Trouts (probably of the same species) are also taken in Ulleswater, a lake in Cumberland, of a much superior size to those of Lough Neagh. These are supposed to be the same with the Trout of the Lake of Geneva.

In the River Eyneon, not far from Machyntleth, in Merionethshire, and in one of the Snowdon lakes, are found a variety of Trout, which are naturally deformed, having a strange crookedness near the tail, resembling that of the perch before described.

The stomachs of the common Trouts are uncommonly thick and muscular. They feed on the shell-fish of lakes and rivers, as well as on the small fish. They likewise take into their stomachs gravel, or small stones, to assist in comminuting the testaceous parts of their food. The Trouts of certain lakes in Ireland, such as those of the province of Galway, and some others, are remarkable for the great thickness of their stomachs, which, from some slight resemblance to the organ of digestion in birds, have been called gizzards; the Irish name the species that has them GILLAROO TROUTS. These stomachs are sometimes served up to table under the former

appellation. It does not, however, appear that the extraordinary strength of stomach in the Irish fish should give any suspicion that it is a distinct species; the nature of the waters might increase the thickness; or the superior quantity of shell-fish, which may more frequently call for the use of its comminuting powers than those of our Trouts, might occasion this difference.

Trouts are most voracious fish, and afford excellent diversion to the angler; the passion for the sport of angling is so great in the neighbourhood of London, that the liberty of fishing in some of the streams in the adjacent counties is purchased at the rate of ten pounds per annum.

These fish shift their quarters to spawn, and, like salmon, make up towards the head of rivers to deposit their roes.

THE RED CHAR.



THE head of this fish terminates in a blunt point, and its body is covered with very minute scales; the lateral line is straight. All the fins except the dorsal are reddish. This species is very properly denominated the Alpine Char, by Linnæus; for its constant residence is in the lakes of the high and mountainous parts of Europe. A few are found in some of the lakes in Wales, and in Loch Inch, in Scotland; from which last, it is said to migrate into the Spey to spawn. Seldom, however, does this

species venture into any running stream; its principal resort is in the cold lakes of the Lapland Alps, where it is fed by the innumerable quantity of gnats that infest those dreary regions.

The largest and most beautiful Chars are found in the Lake of Winander-Mere, in Westmoreland, where there are three species, the RED, the GILT, and the CASE CHAR. These kinds are nearly similar in their external appearance; but the time and manner of their spawning are very different. The method of taking these fish is with nets, or trammels as they are called, which are furnished with bait to allure the fish, and left for several days, till they are known to enter them. Potted Char is a delicacy which is in high repute on the Continent as well as in England.

THE GRAYLING, OR UMBER,



Is another of this genus, which haunts clear and rapid streams. It is of an elegant form, less deep than a trout. It is in general of a fine silvery gray, but when just taken it is varied slightly with blue and gold. The scales are large; the first dorsal fin consists of twenty-one rays; this fin is spotted, all the rest are plain: the tail is much forked. It haunts clear and rapid streams, particularly those of mountainous countries. In Lapland, where it is very

common, the inhabitants use its entrails, instead of rennet, to make their cheese from the milk of the rein-deer. The stomach is so hard and thick, that to the touch it appears like cartilage. The largest that has been heard of was taken near Ludlow; it was half a yard long, and weighed four pounds six ounces. The ancients believed that the oil from them would obliterate freckles and small pox marks.

THE SMELT



INHABITS the northern seas, and is never found so far south as the Mediterranean. Its name is supposed to be a contraction of "smell it," from its very agreeable smell. The Germans, however, call it the Stink-fish. Its form is very elegant; it is of a silvery colour, tinged with yellow; and the skin is almost transparent. The largest we have heard of was thirteen inches long, and weighed half a pound. There are two species, the *Hepsetus* and the *Menidia*.

THE GWINIAD

Is found in the lakes of several of the alpine parts of Europe. It is a gregarious fish, and approaches the shores in vast shoals in spring and summer. A fisherman, in 1775, took near eight thousand at one draught. It is of an insipid taste, and must be

eaten soon. The back is arched and glossed with blue and purple, the sides are of a silvery cast, tinged with gold. The mouth is small, and without teeth. It is about eleven inches long.

THE PIKE



Is common in most of the lakes of Europe, but the largest are those taken in Lapland, which, according to Schæffer, are sometimes eight feet long. They are taken there in great abundance, dried and exported for sale. The largest fish of this kind which we have ever heard of in England, weighed thirty-five pounds.

According to the common saying, these fish were introduced into England in the reign of Henry the Eighth, in 1537. They were so rare, that a Pike was sold for double the price of a house-lamb, in February, and a Pikerel for more than a fat capon.

All writers who treat of this species bring instances of its vast voraciousness. We have known one that was choked by attempting to swallow one of its own species that proved too large a morsel. Yet its jaws are very loosely connected; and have on each side an additional bone like the jaw of a viper; which renders them capable of great disten-

tion when it swallows its prey. It does not confine itself to feed on fish and frogs, it will devour the water-rat, and draw down the young ducks as they are swimming about.

At the Marquis of Stafford's canal at Trentham, a Pike seized the head of a swan, as she was feeding under water, and gorged so much of it as killed them both. The servants perceiving the swan with its head under water for a longer time than usual, took the boat, and found both swan and Pike dead.

But there are instances of its fierceness still more surprising, and which, indeed, border a little on the marvellous. Gesner relates, that a famished Pike in the Rhone seized on the lips of a mule, that was brought to water, and that the beast drew the fish out before it could disengage itself; that people have been bit by these voracious creatures while they were washing their legs, and that they will even contend with the otter for its prey, and endeavour to force it out of its mouth.

Small fish show the same uneasiness and detestation at the presence of this tyrant, as the little birds do at the sight of the hawk or owl. When the Pike lies dormant near the surface (as is frequently the case) the lesser fish are often observed to swim around it in vast numbers, and in great anxiety. Pike are often haltered in a noose, and taken while they lie thus asleep, as they are often found in the ditches near the Thames, in the month of May.

In the shallow water of the Lincolnshire fens, they are frequently taken in a manner peculiar, we believe, to that county and the isle of Ceylon. The fishermen make use of what is called a crown-net, which is no more than a hemispherical basket, open at top and bottom. He stands at the end of one of

the little fen-boats, and frequently puts his basket down to the bottom of the water, then poking a stick into it, discovers whether he has any booty by the striking of the fish; vast numbers of Pike are taken in this manner.

The longevity of this fish is very remarkable, if we may credit the accounts given of it. Rzaczynski tells us of one that was ninety years old; but Gesner relates, that in the year 1497, a Pike was taken near Hailbrun, in Suabia, with a brazen ring affixed to it, on which were these words in Greek characters: *I am the fish which was first of all put into this lake by the hands of the governor of the universe, Frederick the Second, the 5th of October, 1230*: so that the former must have been an infant to this Methusalem of a fish.

Pike spawn in March or April, according to the coldness or warmth of the weather. When they are in high season, their colours are very fine, being green, spotted with bright yellow; and the gills are of a most vivid and full red. When out of season, the green changes to gray, and the yellow spots turn pale.

The head is very flat; the upper jaw broad, and is shorter than the lower: the under jaw turns up a little at the end, and is marked with minute punctures. The teeth are very sharp, disposed not only in the front of the upper jaw, but in both sides of the lower, in the roof of the mouth, and often the tongue. The slit of the mouth, or the gape, is very wide; the eyes small. The dorsal fin is placed very low on the back, and consists of twenty-one rays; the pectoral of fifteen; the ventral of eleven; the anal of eighteen. The tail is bifurcated.

THE GAR-PIKE, GAR-FISH, OR SEA NEEDLE,



COMES in shoals on our coasts, and precedes the mackerel, whose shoals it is vulgarly supposed to pilot through the regions of the deep. It resembles that fish in flavour, but is distinguished from all of the kind by the backbone, which turns a fine light green when the fish is boiled. It sometimes grows to the length of three feet. The jaws are exceeding long, slender, and pointed, and the edges of them are armed with numbers of short slender teeth. It is sometimes known by the name of the Horn-fish. The tail is forked. The back is a fine green, beneath which appears a rich changeable purple and blue, and the sides and belly are of a fine silvery hue.

THE SAURY-PIKE

Is about eleven inches long, and its jaws are protracted like those of the sea-needle. The body also resembles that of an eel, but, like the mackerel, it has a number of small fins near the tail, which is forked.

THE ARGENTINE

Is a small fish between two and three inches long. The body is compressed, and almost of an equal breadth to the anal fin. The back is of a dusky green, the sides and covers of the gills as if plated with silver. It is taken in the sea.

THE ATHERINE

Is common in the sea near Southampton, where it is called a smelt. It never deserts the place, and is constantly taken, except in hard frost. It is about four inches in length, the back straight, the belly a little protuberant. Its colour is silvery, tinged with yellow, and below the side line is a row of black spots. It is semi-pellucid.

THE MULLET

Was formerly much celebrated as a treat for the epicure, and frequent allusions to it are found in the ancient satirists. It is a fish of an elegant form; is generally found by the sea shores, where it roots like a hog in the sand or mud, and it is so active, that it frequently escapes, by leaping out of the fishermen's nets. The head is almost square, and is flat at the top. It has no teeth, only in the upper lip is a small roughness. The tail is much forked. The colour of the back is dusky, marked with blue and green. The sides silvery, marked with dusky lines, reaching from the head to the tail. The belly is silvery.

Of the FLYING FISH so much has been said under the article *Dorado*, that it is only necessary in this place to add a short description of it.

The body of this fish is oblong; the head is almost three cornered; the fin covering the gills with ten rays; the pectoral fins placed high, and as long as the whole body; the back fin at the extremity of the back. The tail is bifurcated.

THE HERRING.

THE common Herring is distinguished from the other fish of the same tribe, by the projection of the lower jaw, which is curved, and by having seventeen rays in the ventral fin. The head and mouth are small, the tongue short, pointed, and armed with teeth ; the covers of the gills generally have a violet or red spot, that disappears soon after the death of the fish, which survives a very short time, when taken out of its natural element.

The principal of the British Herring fisheries are off the Scotch and Norfolk coasts ; and in our seas the fishing is always carried on by nets stretched in the water, one side of which is kept from sinking, by means of buoys fixed to them at proper distances ; and, as the weight of the net makes the side sink to which no buoys are fixed, it is suffered to hang in a perpendicular position, like a screen : and the fish, when they endeavour to pass through it, are entangled in its meshes, from which they cannot disengage themselves. There they remain till the net is hauled in, and they are shaken or picked out. The nets are never stretched to catch Herrings but during the night, for in the dark they are to be taken in much the greatest abundance.

After the nets are hauled, the fish are thrown upon the deck of the vessel, and each of the crew has a certain task assigned to him. One part is employed in opening and gutting them, another in salting, and a third in packing them in the barrels in layers of salt. The Red Herrings lie twenty-four hours in the brine ; they are then taken out, strung by the gills on little wooden spits, and hung in chimney formed to receive them ; after which

of brushwood, which yields much smoke, but no flame, is kindled under them, and they remain there till sufficiently smoked and dried, when they are put into barrels for carriage.

Herrings become very soon tainted after they are dead; in summer they are sensibly worse for being out of the water only a few hours; and if exposed only a few minutes to the rays of the sun, they are quite useless, and will not take the salt.

The PILCHARD is thicker and rounder than the Herring. The nose is shorter in proportion, and turns up. The back is more elevated, the belly less sharp. The back fin of the Pilchard is placed exactly in the centre of gravity, so that when taken up by it, the fish exactly preserves an equilibrium, whereas that of the Herring dips at the head. The scales of the Pilchard adhere very closely, whereas those of the Herring very easily drop off. The Pilchard is in general less than the Herring, and is fatter and fuller of oil.

Of all the migrating fish, the Herring and the Pilchard take the most adventurous voyages. Herrings are found in the greatest abundance in the highest northern latitudes. In those inaccessible seas, that are covered with ice for a great part of the year, the Herring and Pilchard find a quiet and sure retreat from all their numerous enemies: thither neither man, nor their still more destructive enemy, the fin-fish, or the cachalot, dares to pursue them. The quantity of insect food which those seas supply is very great; whence, in that remote situation, defended by the icy rigour of the climate, they live at ease, and multiply beyond expression. From this most desirable retreat, Anderson supposes they would never depart, but that their numbers render

it necessary for them to migrate; and, as bees from a hive, they are compelled to seek for other retreats.

For this reason, the great colony is seen to set out from the icy sea about the middle of winter; composed of such numbers, that if all the men in the world were to be loaded with Herrings, they would not carry the thousandth part away. But they no sooner leave their retreats, but millions of enemies appear to thin their squadrons. The fin-fish and the cachalot swallow barrels at a yawn; the porpus, the grampus, the shark, and the whole numerous tribe of dog-fish, find them an easy prey, and desist from making war upon each other: but still more, the unnumbered flocks of sea-fowl that chiefly inhabit near the pole, watch the outset of their dangerous migration, and spread extensive ruin.

In this exigence, the defenceless emigrants find no other safety, but by crowding closer together, and leaving to the outmost bands the danger of being the first devoured; thus like sheep when frightened, that always run together in a body, and each finding some protection in being but one of many that are equally liable to invasion, they are seen to separate into shoals, one body of which moves to the west, and pours down along the coast of America, as far south as Carolina, and but seldom farther. In Chesapeak Bay, the annual inundation of these fish is so great, that they cover the shores in such quantities as to become a nuisance. Those that hold more to the east, and come down towards Europe, endeavour to save themselves from their merciless pursuers, by approaching the first shore they can find; and that which first offers in their descent is the coast of Iceland, in the beginning of

March. Upon their arrival on that coast, their phalanx, which has already suffered considerable diminutions, is, nevertheless, of amazing extent, depth, and closeness, covering an extent of shore as large as the island itself. The whole water seems alive; and is seen so black with them at a great distance, that the number seems inexhaustible.

That body which comes upon our coasts, begins to appear off the Shetland Isles in April. These are the forerunners of the grand shoal which descends in June; while its arrival is easily announced, by the number of its greedy attendants, the gannet, the gull, the shark, and the porpus. When the main body is arrived, its breadth and depth is such, as to alter the very appearance of the ocean. It is divided into distinct columns, of five or six miles in length, and three or four broad; while the water before them curls up, as if forced out of its bed. Sometimes they sink for the space of ten or fifteen minutes, then rise again to the surface; and, in bright weather, reflect a variety of splendid colours, like a field bespangled with purple, gold, and azure. The fishermen are ready prepared to give them a proper reception; and, by nets made for the occasion, they take sometimes above two thousand barrels at a single draught.

Such has long been the received opinion with respect to the migration of Herrings, and it is so poetical that it is almost a pity to disturb it. But science must listen only to the voice of truth. The author of the *British Naturalist* has given a rude shock to the migratory theory. "Simply, then, the story cannot be true (says he), because it is impossible. The Herrings do not come in myriads from the polar sea, beginning their progress in January, because there are no means of producing them there.

Spawn has not been found to animate in any place except floating near the surface, or in shallow water, where both the sun and the air act upon it; and while the polar seas and shores are open to such action, the Herrings are not there; they are on our shores, the full grown and the young. But setting aside the impossibility, the supposed emigration would be without an object: they would not come for food, as they are said to leave the north just when food would be found there; and if they are annually produced in the north, they could not come to our shores for the purpose of spawning, even though they are all obviously in preparation for such a purpose. Beside, there is no animal that migrates southward in the spring; and therefore the theory would require one law for the rest of creation, and another for the Herring; that the latter should be chilled by the genial warmth of the spring, and warmed by the polar frost. Now, so far is the production of fish from being independent of the influence of heat, that, just as one would be led to infer from the slow progress of the solar beams through the element in which they live, they require the whole, or the greater part of our summer, to mature the germs of their countless broods. Nay, it appears that many, if not most of the species, cannot mature their spawn in the depths of the ocean, to which they retire to recruit their strength, but that they come to the shores and shallows, where the heat of the sun can penetrate to the bottom, and be reflected by it, for the purpose of maturing as well as depositing their spawn.

“The Herrings come to the shores and estuaries to mature and propagate their spawn, which they do over a greater range of the year than most other fish; continuing the operation to the middle of

winter, and retiring into deeper water after that is done. But there is no reason to conclude, that they have much migration in latitude; or, that they ever move far from those shores which they frequent in the season. The fry too are found on the shores and in the bays and estuaries frequented by their parents; and they do not go to the deep water till late in the season. They even appear to go farther up the rivers than the old fish, for they may be taken in brackish water, with a common trout fly."

THE SPRAT



Is now generally allowed not to be the fry of the herring, as, from its great resemblance, was formerly supposed. The back fin of the Sprat is more remote from the nose than that of the herring; but a principal distinction is, that the belly of both the herring and pilchard is quite smooth, whereas that of the Sprat is serrated. The herring has fifty-six vertebræ, the Sprat only forty-eight. The Sprat seldom exceeds five inches in length.

THE ANCHOVY

Is about six inches and a half in length. The body is slender, but thicker in proportion than the herring. The scales are large, and easily fall off. The back is green, and semipellucid; the sides and belly silvery; and the tail forked.

At different seasons it frequents the Atlantic Ocean and the Mediterranean Sea, passing through the Straits of Gibraltar towards the Levant in the months of May, June, and July. The greatest fishery is at Gorgona, a small isle west of Leghorn, where they are taken at night in nets, into which they are allured by lights fixed to the stern of the vessels. When cured, their heads are cut off, their gall and entrails taken out, then salted and packed in barrels. It scarce needs to be mentioned that, being put on the fire, they dissolve in almost any liquor. They are well tasted when fresh. But it has been found by experience, that Anchovies taken thus by torchlight are neither so good, so firm, nor so proper for keeping, as those which are taken otherwise. From December to March, vast numbers are caught on the shores of Provence and Catalonia, and during June and July in the English Channel, and in the environs of Bayonne, Venice, Rome, and Genoa. From the Anchovy the ancients prepared one of the liquids called *garum*, which was in high repute among epicures.

THE SHAD

Is taken in many rivers; those of the Severn are most esteemed, and are distinguished by the London fishmongers by the French name of *Alosse*. The Thames Shad is a very insipid coarse fish. The Thames Shad, when it visits the Severn, is called the *Twaite*, and is held in great disrepute.

The difference between the two kinds is as follows:—The true *Shad* weighs from four to eight pounds; the *Twaite* from half a pound to two. The *Twaite* may also be known from a small Shad, by having one or more black spots on the sides; when it has only one, it is always near the gill.

The Shad in form rather resembles the herring, but is larger and thinner, or more compressed in proportion. The head slopes considerably from the back; and the under jaw is longer than the upper.

THE CARP

Is a genus which, besides the fish which bears that name, includes several others well known to anglers, viz. the barbel, the gudgeon, the crucian, the bream, the tench, the roach, dace, &c.

THE CARP



Is one of the naturalized fish in England, having been introduced there by Leonard Maschal, about the year 1514, to whom the English were also indebted for that excellent apple the pepin. The many good things which that island wanted before that period are enumerated in this old distich:

“Turkeys, carp, hops, pickerel, and beer,
Came into England all in one year.”

As to the two last articles we have some doubts, the others we believe to be true. Russia wants these fish at this day; Sweden has them only in the ponds of the people of fashion: Polish Prussia is the chief seat of the Carp; they abound in the rivers and lakes of that country, particularly in the Frisch and Curisch-haff, where they are taken of a vast size. They are there a great article of commerce, and sent in well

boats to Sweden and Russia. The merchants purchase them out of the waters of the noblesse of the country, who draw a good revenue from this article. Neither are there wanting among our gentry instances of some who make good profits of their ponds.

The ancients do not separate the Carp from the sea-fish. We are credibly informed that they are sometimes found in the harbour of Dantzick, between the town and a small place called Hela.

Carp are very long-lived. Gesner brings an instance of one that was a hundred years old. They also grow to a very great size. On our own knowledge we can speak of none that exceed twenty pounds in weight; but Jovius says, that they were sometimes taken in the *Lacus Larius* (the *Lago di Como*) of two hundred pounds weight; and *Rzaczynski* mentions others taken in the *Dneister* that were five feet in length.

The Carp is a prodigious breeder: its quantity of roe has been found so great that, when taken out and weighed against the fish itself, the former has been found to preponderate. From the spawn of this fish caviare is made for the Jews, who hold the sturgeon in abhorrence.

These fish are extremely cunning, and on that account are by some styled the *River Fox*. They will sometimes leap over the nets, and escape that way; at others, will immerse themselves so deep in the mud, as to let the net pass over them. They are also very shy of taking a bait; yet at the spawning time they are so simple as to suffer themselves to be tickled, and caught by any body that will attempt it. It is so tenacious of life that it may be kept alive for a fortnight in wet straw or moss.

This fish is apt to mix its milt with the roe of other

fish, from which is produced a spurious breed; we have seen the offspring of the Carp and tench, which bore the greatest resemblance to the first: we have also heard of the same mixture between the Carp and bream.

The Carp is of a thick shape; the scales very large, and when in best season of a fine gilded hue. The jaws are of equal length; there are two teeth in the jaws, or on the tongue; but at the entrance of the gullet, above and below, are certain bones that act on each other, and comminute the food before it passes down. On each side of the mouth is a single beard; above those on each side another, but shorter: the dorsal fin extends far towards the tail, which is a little bifurcated; the third ray of the dorsal fin is very strong, and armed with sharp teeth, pointing downwards; the third ray of the anal fin is constructed in the same manner.

THE BARBEL



WAS so extremely coarse as to be overlooked by the ancients till the time of Ausonius, and what he says is no panegyric on it; for he lets us know it loves deep waters, and, that when it grows old, it was not absolutely bad.

It frequents the still and deep parts of rivers, and

lives in society, rooting like swine with their noses in the soft banks. It is so tame as to suffer itself to be taken with the hand ; and people have been known to take numbers by diving for them. In summer they move about during night in search of food, but towards autumn, and during winter, confine themselves to the deepest holes.

They are the worst and coarsest of fresh-water fish, and seldom eaten but by the poorer sort of people, who sometimes boil them with a bit of bacon, to give them a relish. The roe is very noxious, affecting those who unwarily eat of it with a nausea, vomiting, purging, and a slight swelling.

It is sometimes found of the length of three feet, and eighteen pounds in weight : it is of a long and rounded form ; the scales not large. Its head is smooth ; the nostrils placed near the eyes ; the mouth is placed below : on each corner is a single beard, and another on each side the nose. The dorsal fin is armed with a remarkably strong spine, sharply serrated, with which it can inflict a very severe wound on the incautious handler, and even do much damage to the nets. The pectoral fins are of a pale brown colour ; the ventral and anal tipped with yellow ; the tail a little bifurcated, and of a deep purple ; the side line is straight. The scales are of a pale gold colour, edged with black ; the belly is white.

THE TENCH

UNDERWENT the same fate with the barbel, in respect to the notice taken of it by the early writers : and even Ausonius, who first mentions it, treats it with such disrespect as evinces the great capriciousness of taste ; for that fish, which at present is held in

such good repute, was in his days the repast only of the canaille.

It has been by some called the Physician of the fish, and the slime so healing, that the wounded apply it as a styptic.

Whatever virtue its slime may have to the inhabitants of the water, we will not vouch for; but its flesh is a wholesome and delicious food to those of the earth. The Germans are of a different opinion. By way of contempt they call it Shoemaker. Gesner even says, that it is insipid and unwholesome.

It does not commonly exceed four or five pounds in weight, but we have heard of one that weighed ten pounds. Salvianus speaks of some that arrived at twenty pounds.

They love still waters, and are rarely found in rivers; they are very foolish, and easily caught.

The Tench is thick and broad in proportion to its



length; the scales are very small, and covered with slime. The irides are red; there is sometimes, but not always, a small beard at each corner of the mouth. The colour of the back is dusky; the dorsal and ventral fins of the same colour; the head, sides, and belly of a greenish cast, most beautifully mixed with

gold, which is in its greatest splendour when the fish is in the highest season. The tail is quite even at the end, and very broad.

THE GUDGEON.



ARISTOTLE mentions the Gudgeon in two places; once as a river fish, again as a species that was gregarious; and in a third place he describes it as a sea fish.

This fish is generally found in gentle streams, and is of a small size; those few, however, that are caught in the Kennet and Coln are three times the weight of those taken elsewhere. The largest we ever heard of was taken near Uxbridge, and weighed half a pound.

They bite eagerly, and are assembled by raking the bed of the river; to this spot they immediately crowd in shoals, expecting food from this disturbance.

The shape of the body is thick and round; the irides tinged with red; the gill covers with green and silver. The lower jaw is shorter than the upper; at each corner of the mouth is a single beard; the back olive, spotted with black; the side line straight; the sides beneath that silvery; the belly white. The tail is forked; that, as well as the dorsal fin, is spotted with black.

THE BREAM



Is an article of great importance on the Continent, though its flesh is not equal to that of the carp. It is found in all the great lakes, and in rivers which have a gentle current, and a bottom composed of marl, clay, and herbage; and it abides in the deepest parts. It is taken mostly under the ice; and this fishery is so considerable that, in some of the lakes belonging to Prussia, there have been taken to the value of two hundred pounds at a time; they are also caught in great quantities in Holstein, Mecklenburg, Livonia, and Sweden: in a lake near Nordkœping, there were taken at one time in March, 1749, no less than fifty thousand, weighing eighteen thousand two hundred pounds.

It is extremely deep, and thin in proportion to its length. The back rises much, and is very sharp at the top. The head and mouth are small; on some we examined in the spring were abundance of minute whitish tubercles, an accident which Pliny seems to have observed befalls the fish of the Lago Maggiore and Lago di Como. The scales are very large; the sides flat and thin. The dorsal fin has eleven rays, the second of which is the longest: that fin, as well as all the rest, are of a dusky colour; the back of the same hue; the sides yellowish. The tail is very large, and of the form of a crescent.

THE RUD

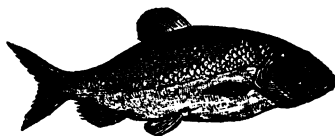
Is found in the Charwell, near Oxford; in the Fens, near Holderness. The body is extremely deep, like that of the bream, but much thicker. The head is small; the back vastly arched; the scales very large. The back is of an olive colour; the sides and belly gold; the ventral and anal fins, and the tail, of a deep red. It appears to be the same fish with the Shallow of the Cam.

THE CRUCIAN

Is common in many of the fishponds about London, and other parts of the south of England; but we believe is not a native fish.

It is very deep and thick; the back is much arched; the dorsal fin consists of nineteen rays; the two first strong and serrated: the pectoral fins have each thirteen rays; the ventral nine; the anal seven or eight: the lateral line is parallel with the belly; the tail almost even at the end. The colour of the fish in general is a deep yellow; the meat is coarse, and little esteemed.

THE ROACH.



'SOUND as a Roach,' is a proverb that appears to be but indifferently founded, that fish being not more distinguished for its vivacity than many others; yet it is used by the French as well as the English, who compare people of strong health to the *Rouget*, or

Roach. It is so silly a fish that it is called the Water Sheep.

It is a common fish, found in many of our deep still rivers, affecting, like the others of this genus, quiet waters. It is gregarious, keeping in large shoals. We have never seen them very large. Old Walton speaks of some that weighed two pounds. In a list of fish sold in the London markets, with the greatest weight of each, communicated to us by an intelligent fishmonger, there is mention of one whose weight was five pounds.

The Roach is deep, but thin, and the back is much elevated, and sharply ridged; the scales large, and fall off very easily. The side line bends much in the middle towards the belly.

THE DACE,



Like the roach, is gregarious, haunts the same places, is a great breeder, very lively, and during summer is very fond of frolicking near the surface of the water. This fish, and the roach, are coarse and insipid meat.

Its head is small; the irides of a pale yellow; the body long and slender; its length seldom above ten inches, though in the above-mentioned list is an account of one that weighed a pound and a half; the scales smaller than those of the roach.

The back is varied with dusky, with a cast of a yellowish green; the sides and belly silvery; the dorsal fin dusky; the ventral, anal, and caudal fins red, but less than those of the former; the tail is very much forked.

THE CHUB.



SALVIANUS imagines this fish to have been the *Squalus* of the ancients, and grounds his opinion on a supposed error in a certain passage in Columella and Varro, where he would substitute the word *Squalus* instead of *Scarus*.

That the *Scarus* was not our *Chub* is very evident; not only because the Chub is entirely an inhabitant of fresh waters, but likewise it seems improbable that the Romans would give themselves any trouble about the worst of river fish, when they neglected the most delicious kinds: all their attention was directed towards those of the sea; the difficulty of procuring them seems to have been the criterion of their value, as is ever the case with effete luxury.

The Chub is a very coarse fish, and full of bones; it frequents the deep holes of rivers, and during summer commonly lies on the surface, beneath the shade of some tree or bush. It is a timid fish, sinking to the bottom on the least alarm, even at the passing of a shadow, but they will soon resume their situation. It feeds on worms, caterpillars, grasshoppers, beetles, and other coleopterous insects that

happen to fall into the water: and it will even feed on crayfish. This fish will rise to a fly.

This fish takes its name from its head, not only in the English, but in other languages; it is called *Chub*, according to Skinner, from the old English, *cop*, a head; the French, in the same manner, call it *Testard*; the Italians, *Capitone*.

It does not grow to a large size: we have known some that weighed above five pounds; but Salvianus speaks of others that were eight or nine pounds in weight.

The body is oblong, rather round, and of a pretty equal thickness the greatest part of the way; the scales are large: the irides silvery; the cheeks of the same colour; the head and back of a deep dusky green; the sides silvery, but in the summer yellow; the belly white; the pectoral fins of a pale yellow; the ventral and anal fins red; the tail a little forked, of a brownish hue, but tinged with blue at the end.

THE BLEAK



Is very common in many of our rivers, and they keep together in large shoals. These fish seem at certain seasons to be in great agonies; they tumble about near the surface of the water, and are incapable of

swimming far from the place, but in about two hours recover, and disappear. Fish thus affected, the Thames fishermen call Mad Bleaks. They seem to be troubled with a species of *gordius* or hair-worm, of the same kind with those which Aristotle says that the *ballerus* and *tillo* are infested with, which torments them so that they rise to the surface of the water, and then die.

Artificial pearls are made with the scales of this fish, and we think of the dace. They are beaten into a fine powder, then diluted with water, and introduced into a thin glass bubble, which is afterwards filled with wax. The French were the inventors of this art. Dr. Lister tells us, that when he was at Paris, a certain artist used in one winter thirty hampers full of fish in this manufacture.

The bleak seldom exceeds five or six inches in length; their body is slender, greatly compressed sideways, not unlike that of the sprat. The eyes are large; the irides of a pale yellow; the under jaw the largest; the lateral line crooked; the gills silvery; the back green; the sides and belly silvery; the fins pellucid; the scales fall off very easily; the tail much forked.

During the month of July there appear in the Thames, near Blackwall and Greenwich, innumerable multitudes of small fish, which are known to the Londoners by the name of WHITE BAIT. They are esteemed very delicious when fried with fine flour, and occasion, during the season, a vast resort of the lower order of epicures to the taverns contiguous to the places they are taken at.

There are various conjectures about this species, but all terminate in a supposition, that they are the fry of some fish, but few agree to which kind they

owe their origin. Some attribute it to the shad, others to the sprat, the smelt, and the bleak. That they neither belong to the shad, nor the sprat, is evident from the number of branchiostegous rays, which in those are eight, in this only three. That they are not the young of the smelt is as clear, because they want the *pinna adiposa*, or rayless fin; and that they are not the offspring of the bleak is extremely probable, since we never heard of the White Bait being found in any other river, notwithstanding the bleak is very common in several of the British streams: but as the White Bait bears a greater similarity to this fish than to any other we have mentioned, we give it a place here as an appendage to the bleak, rather than form a distinct article of a fish which it is impossible to class with certainty.

It is probable that it is of the carp or *cyprinus* genus; it has only three branchiostegous rays, and only one dorsal fin; and in respect to the form of the body, it is compressed like that of the bleak. Its usual length is two inches; the under jaw is the longest; the irides silvery, the pupil black; the dorsal fin is placed nearer to the head than to the tail, and consists of about fourteen rays; the side line is straight; the tail is forked, the tips black. The head, sides, and belly, are silvery; the back tinged with green.

THE MINNOW

Is frequently found in many of our small gravelly streams, where they keep in shoals.

The body is slender and smooth, the scales being extremely small. It seldom exceeds three inches in length. The lateral line is of a golden colour; the back flat, and of a deep olive; the sides and belly

vary greatly in different fish; in a few are of a rich crimson, in others bluish, in others white. The tail



is forked, and marked near the base with a dusky spot.

THE GOLD FISH.



THESE fish are now quite naturalized in Europe, and breed as freely in the open waters as the common carp.

They were first introduced into England about the year 1691, but were not generally known till 1728, when a great number were brought over, and presented first to Sir Matthew Dekker, and by him circulated round the neighbourhood of London, whence they have been distributed to most parts of the country.

In China the most beautiful kinds are taken in a small lake in the province of Che-Kyang. Every person of fashion keeps them for amusement, either

in porcelain vessels, or in the small basons that decorate the courts of the Chinese houses. The beauty of their colours, and their lively motions, give great entertainment, especially to the ladies, whose pleasures, by reason of the cruel policy of that country, are extremely limited.

In the form of the body they bear a great resemblance to a carp. They have been known in Europe to arrive at the length of eight inches; in their native place they are said to grow to the size of our largest herring.

The nostrils are tubular, and form a sort of appendages above the nose; the dorsal fin and the tail vary greatly in shape; the tail is naturally bifid, but in many is trifid, and in some even quadrifid; the anal fins are the strongest characters of this species, being placed not behind one another, like those of other fish, but opposite each other, like the ventral fins.

The colours vary greatly; some are marked with a fine blue, with brown, with bright silver; but the general predominant colour is gold, of a most amazing splendour; but their colours and form need not be dwelt on, since those who want opportunity of seeing the living fish, may survey them expressed in the most animated manner, in the works of Mr. George Edwards.

The SILVER FISH is a native of the seas in the vicinity of the Cape of Good Hope, and is about the size and shape of a small carp, which it also resembles in taste. It is of a white colour, transversely striped with silvery lines.

THE TELESCOPE CARP.



THE whole body of this fish, and the ground colour of the fins, are of a beautiful sanguineous red, darker towards the back, and lighter towards the belly; the membranes of the fins are almost white, and the red rays shining through them have a very fine effect; the three white points of the tail form to the idea a trident or a tulip. The head is short but large, the mouth is small, the nostrils are single. The pupil of the eye is black, the iris yellow; and the eyes are protuberant; the back is round; the lateral line nearer the back than the head. The scales are large; the rays of the fins ramified. This beautiful fish is found in the fresh waters of China, where it is kept like the gold fish, of which it is probably a variety.

THE HORNED SILURE.

THIS fish has a broad, flat, thin head; and the horns, which occupy the place of eyes in other species, are armed with short crooked spines like teeth, and are probably weapons of defence. The head and body are entirely covered with a skin resembling leather; the eyes lie on each side of the head near the mouth; and the tail fin is slightly forked.

This fish is of a very dark green colour; but the sides are somewhat lighter. Another remarkable

peculiarity in this fish is the dorsal fin: it is close to the head, and its front ray is long, stiff, dentated



like the horns, and is probably an instrument of defence also. The belly is short and thick; and the lateral line goes meandering along the middle of the body, and puts out branches each way. This species grows to a considerable size; its flesh is eatable, but not much sought after. It is found near the shores of Asia and Surinam.

One of these fish caught at Surinam, on examination, was observed to have its mouth filled with yellow eggs, in none of which, however, could be found a fish completely formed; from which it is concluded, that the Silure, to defend her eggs from the voracious tribes, hatches them instinctively in her mouth. But she is supposed at times to emit them from her mouth, when in search of food to appease her appetite, and when satisfied, to take them into her mouth again.

Of the Silure tribe, there are nearly thirty different species, most of them natives of the Indian and American seas. One of them, the *SILURIS CLARIAS*, of Linnæus, is called Scheilan by the Arabians. Hasselquist relates, that he saw the cook of a Swedish merchant ship die of the poison communicated by a prick from the bone of the breast fin of this fish.

THE TRUMPET FISH.



THIS fish, which is also called the Bellows Fish, belongs to the genus *Centriscus*, and has a short broad body, laterally compressed, much resembling a pair of bellows, and of a pale red colour. The head, broadish above, ends in a bent cylinder below, and the aperture of the mouth, which is small, is at the end of the long beak; the aperture is closed by the lower jaw, which shuts into the upper like the lid of a snuffbox. The nostrils are double, and near the eyes, which are large, with a black pupil and a pale red iris. This fish can hide its small ventral fins in a furrow which lies behind them: all the fins are gray. The body is scaly and rough. This fish haunts the Mediterranean; but is often found in the ocean, whither, however, it seems to be driven by tempests, as it is never seen there but in stormy weather. It is tender, well tasted, and easy of digestion; but, being very thin, it is generally sold with other small fish at a low price. As the fins are very small in proportion to the other parts, so that it cannot swim fast enough to avoid its enemies, Providence has given it a moveable serrated spine for its defence, which is the first ray in the dorsal fin; with this it will successfully defend itself against almost any fish, unless taken by surprise. The name of the Trumpet-fish was given to it by mariners, in consequence of its breathing the water out of its snout with a sounding noise.

THE TOBACCO-PIPE FISH.

THIS species is known in the seas of America and Japan. The head is very long, quadrangular, and adorned with rays. The aperture of the mouth is wide, and in an oblique direction; the lower jaw is somewhat longer than the upper; the teeth are small; the tongue moveable; the nostrils double, and near the eyes, which are large, with a black pupil and silvery iris. The body is devoid of visible scales, flat in the front part, and rounded towards the tail. The lateral line has a straight direction. The anus is much nearer the tail-fin than the head; the belly is long; the fins are short and of a pale red, the rays mostly four-branched. This fish is brown, spotted with blue on the back and sides, and the belly is silvery.

Its usual length appears to be from twelve to eighteen inches, exclusive of the bristle-formed process; which is usually one fourth as long as the body, but it is said to grow sometimes to between three and four feet. In some instances it has been found with two filiform appendages. It lives on small fry and lobsters; it is very plentiful, but lean, and is therefore only eaten by the poor.

THE SEA-COCK.

THIS fish has a very thin body, which is of a silver colour, inclining to red, and without visible scales. The head is large, very much shelving; the mouth large; the jaws are furnished with very small teeth, and the upper lip with two large bones. The nostrils are double, and near the eyes, which are round and large; the pupil is black, the iris brown in-

clining to a silver gray. The opening of the gills is large; the covert is long, consisting of one plate, under which the membrane is hid. The lateral line



is crooked at its origin; the anus is not far from the ventral fins. All the fins are of a bright green colour; in the dorsal fin, the nine first rays are short and hard, the next four long and soft, and both are single; the pectoral, ventral, and tail fins are branched.

This fish lives in all climates; it being found, according to different authors, at Brazil, Jamaica, the Antilles, the East Indies, and Malta. It grows from six to nine inches in length, is well tasted, and lives upon worms, insects, and other little marine animals.



ANGLING



Is a very common amusement in these parts of the world, and is peculiarly agreeable to young persons of a contemplative turn. As this is the case, we shall present our readers with a short abstract of all that is necessary to be known on the subject, and which will prove of more real use to the young sportsman, than the most elaborate treatise of angling.

Description of proper Baits for Fish, with a Table of the different Species, and the Modes of catching them.

FLIES.—1. Stone-fly, found under hollow stones at the sides of rivers, is of a brown colour, with yellow streaks on the back and belly, has large wings, and is in season from April to July. 2. Green drake, found among stones by river sides, has a yellow body ribbed with green, is long and slender, with wings like a butterfly, his tail turns on his back, and from May to Midsummer is very good. 3. Oak-fly, found in the body of an old oak or ash, with its

head downwards, is of a brown colour, and excellent from May to September. 4. Palmer-fly or worm, found on leaves of plants, is commonly called a *caterpillar*, and when it comes to a fly is excellent for trout. 5. Ant-fly, found in ant-hills from June to September. 6. The May-fly is to be found playing at the river-side, especially against rain. 7. The black fly is to be found upon every hawthorn after the buds are come off.

Pastes.—1. Take the blood of sheeps' hearts, and mix it with honey and flour worked to a proper consistence. 2. Take old cheese grated, a little butter sufficient to work it, and colour it with saffron; in winter use rusty bacon instead of butter. 3. Crumbs of bread chewed or worked with honey or sugar, moistened with gum-ivy water. 4. Bread chewed, and worked in the hand till stiff.

Worms.—1. The earth-bob, found in sandy ground after ploughing, it is white, with a red head, and bigger than a gentle: another is found in heathy ground, with a blue head. Keep them in an earthen vessel well covered, and a sufficient quantity of the mould they harbour in. They are excellent from April to November. 2. Gentles, to be had from putrid flesh: let them lie in wheat-bran a few days before used. 3. Flag-worms, found in the roots of flags; they are of a pale yellow colour, are larger and thinner than a gentle, and must be scowered like them. 4. Cow-dung-bob, or clap-bait, found under cow-dung from May to Michaelmas; it is like a gentle, but larger. Keep it in its native earth like the earth-bob. 5. Cadis worm, or cad-bait, found under loose stones in shallow rivers; they are yellow, bigger than a gentle, with a black or blue head, and are in season from April to July. Keep them in

flannel bags. 6. Lob-worm, found in gardens; it is very large, and has a red head, a streak down the back, and a flat broad tail. 7. Marsh-worms, found in marshy ground; keep them in moss ten days before you use them: their colour is a bluish red, and they are a good bait from March to Michaelmas. 8. Brandling red-worms, or blood-worms found in rotten dunghills and tanners' bark; they are small red worms, very good for all small fish, have sometimes a yellow tail, and are called *tag-tail*.

Fish and Insects.—1. Minnow. 2. Gudgeon. 3. Roach. 4. Dace. 5. Smelt. 6. Yellow frog. 7. Snail Slit. 8. Grasshopper.

The fly is either *natural* or *artificial*.

I. *Natural* flies are innumerable. The more usual for this purpose are mentioned in the preceding page.

There are two ways of fishing with natural flies; either on the surface of the water, or a little underneath it.

In angling for chub, roach, or dace, move not your natural fly swiftly, when you see the fish make at it; but rather let it glide freely towards him with the stream; but if it be in a still and slow water, draw the fly slowly sidewise by him, which will make him eagerly pursue.

II. The *artificial* fly is seldom used but in blustering weather, when the waters are so troubled by the winds, that the natural fly cannot be seen, nor rest upon them. Of the artificial fly there are reckoned no less than twelve sorts, of which the following are the principal.

1. For March, the dun-fly; made of dun-wool, and the feathers of the partridge's wing; or the body made of black wool, and the feathers of a black drake.
2. For April the stone-fly; the body made of black

wool, dyed yellow under the wings and tail. 3. For the beginning of May, the ruddy fly; made of red wool, and bound about with black silk, with the feathers of a black capon hanging dangling on his sides next his tail. 4. For June, the greenish fly; the body made of black wool, with a yellow list on either side, the wings taken off the wings of a buzzard, bound with black broken hemp. 5. The moorish fly, the body made of duskish wool, and the wings of the blackish mail of a drake. 6. The tawny-fly, good till the middle of June; the body made of tawny wool, the wings made contrary one against the other; of the whitish mail of a white drake. 7. For July, the wasp-fly; the body made of black wool, cast about with yellow silk, and the wings of drakes' feathers. 8. The steel-fly, good in the middle of July; the body made with greenish wool, cast about with the feathers of a peacock's tail, and the wings made of those of the buzzard. 9. For August, the drake-fly; the body made with black wool, cast about with black silk; his wings of the mail of a black drake, with a black head.

The best rules for artificial fly-fishing are,

1. To fish in a river somewhat disturbed with rain: or in a cloudy day, when the waters are moved by a gentle breeze: the south wind is best; and if the wind blow high, yet not so but that you may conveniently guard your tackle, the fish will rise in plain deeps; but if the wind be small, the best angling is in swift streams.
2. Keep as far from the water-side as may be; fish down the stream with the sun at your back, and touch not the water with your line.
3. Ever angle in clear rivers, with a small fly and slender wing; but in muddy places use a larger.
4. When, after rain, the water becomes brownish,

use an orange fly; in a clear day, a light-coloured fly; a dark fly for dark waters, &c. 5. Let the line be twice as long as the rod, unless the river be encumbered with wood. 6. For every sort of fly have several of the same, differing in colour, to suit with the different complexions of several waters and weathers. 7. Have a nimble eye, and active hand, to strike presently with the rising of the fish; or else he will be apt to spew out the hook. 8. Let the fly fall first into the water, and not the line, which will scare the fish. 9. In slow rivers, or still places, cast the fly across the river, and let it sink a little in the water, and draw it gently back with the current.

Salmon-flies should be made with their wings standing one behind the other, whether two or four. This fish delights in the gaudiest colours that can be; chiefly in the wings, which must be long, as well as the tail.

The above rules for fly-fishing chiefly respect *trout*, which indeed of all fish furnish the most excellent sport in this way.



Bait-fishing is performed in two ways. First, on the ground with a long lead sinker, nicely fixed to the line, at about nine inches from the hook, which is necessary in strong running streams, or shallows, and is chiefly employed for trout; and then the angler feels the fish bite by his pulling at the line. Secondly, By means of a float, which is commonly made of cork or quill, and is proper in still or deep waters. In this case, it is absolutely necessary to plumb the depth, and adjust the hook to the proper depth according to the annexed table.

Much of the success in bottom or bait fishing depends on the angler having a quick eye and hand, and striking at the proper time. Roach, dace, bleak, and gudgeons, must be struck at the first nibble. Perch, tench, and trout, must be allowed a certain time; and pike still longer, for those latter you must always fish with strong tackle and a bit of wire near the hook. In fishing for roach, dace, barbel, carp, or bleak, you must always previously throw into the part of the river or pond where you mean to fish, a quantity of ground bait (bran and bread mixed into a paste and sunk with a stone, or chandlers' greaves) which brings the fish together and keeps them from wandering.

Happy England! (says an elegant writer) where the sea furnishes an abundant and luxurious repast, and the fresh waters an innocent and harmless pastime; where the angler, in cheerful solitude, strolls by the edge of the stream, and fears neither the coiled snake, nor the lurking crocodile; where he can retire at night, with his few trouts, to borrow the charming description of Old Walton, to some friendly cottage, where the landlady is good and the daughter innocent and beautiful; where the room

is cleanly, with lavender in the sheets, and twenty ballads stuck about the wall! There he can enjoy the company of a talkative brother sportsman, have his trouts dressed for supper, tell tales, sing old tunes, or make a catch! There he can talk of the wonders of nature, with learned admiration, or find some harmless sports to content him, and pass away a little time, without offence to God, or injury to man!



An Epitome of the whole Art of Fishing, wherein is shown (at one view) the harbours, seasons, and depths, for catching all sorts of fish usually angled for; also the various baits for each, so digested, as to contain the essence of all the treatises ever written on the subject, exempt from the superfluities, which tend more to perplex than instruct.

Names.	Where found.	Season.	Time to angle.	Depth from ground.	Proper Baits.			Fish and Insects.
					Fishes.	Worms.		No. 8
					No.	No.		
Bream	rough stream, river or mid-pond	Apr. to Mich.	Sun-rise to 9 3 to Sun-set	touch ground	1 3	1 to 7		
Barbel	gravel-banks in currents under bridges	Apr. to Aug.	very early or late	ditto	2	2 6 7		
Bleak	sandy bottom, deep rivers, still deep mid-bottom, ships' sterns	May to Oct.	all day	6 inches from bottom	1 2	2 3 8		
Carp	pond or river	May to Aug.	Sun-rise to 9 3 to Sun-set	3 inches from bottom hot weather, mid-water	1 3 4	1 2 3 4 7		
Chub or Chub-in	ditto	May to Dec.	ditto	ditto	2	1 2 4 5	7 8	
Pace	sandy bottom, deep rivers, ships' sterns	May to Oct.	all day	6 to 12 inches from bottom	3 4	1 to 5 & 8		
Gudgeon	gravel shoals near clay-banks	May to Oct.	ditto	near or on ground	ditto	2 8		
Pike	river in stream } gravel pond deepest } or weedy part } bottom	May to Aug.	Sun-rise to 10 2 to Sun-set	mid-water	wh. stro. line float and snap hook fixed on shore	1 2 3 4 5 6 7		
perch } pogon } pogon }	deep holes in rivers	Aug. to May.	mid-day	ditto	2	1 3 5 7 8	1 6	
Roeach	sandy bottom, deep rivers, ships' sterns	May to Oct.	all day	6 inches from bottom	5	all		
Salmon	ships' sterns and docks	May to Oct.	ditto	9 to 12 inches	1 2 4 5	3 4	ditto	8
gallinets	ships' sterns and docks	Mar. to Sept.	8 to 9, 3 to 6 all day	mid-way to the bottom	all large	1 5 6 7	1	bits of
trout	purling streams and eddies of stony bottom river	Apr. to Oct.	all day	mid-way to the bottom variable	all small	1 2 5	1 2 5	bits of
vench	purling streams and eddies of stony bottom river	Mar. to Mich.	ditto	cold weather, 6 inches to 9 hot weather, top to mid-wat.	1 to 5	1 2 5 to 8	1 8	
gambus or grayling	mud-bottom river or pond	All the year.	Sun-rise to 9 3 to Sun-set	hot weather, 3 inch. from bot. cold weather, 6 to 9 inches	1 3 4	1 3 4 to 7		
	clay bott. swift stream	All the year.	all day	hot weather, top to mid-wat.	1 to 5	all	1 8	

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